R. BALL

A THEATRE OF Politicall Flying-Insects.

R. BALL

WHEREIN

Especially the Nature, the VVorth, the VVork, the Wonder, and the manner of Right-ordering of the

BEE,

Is Discovered and Described.

Together with Discourses, Historical, and Observations Physical concerning them.

And in a Second Part are annexed Meditations, and Observations *Theological* and *Moral*, in Three *Centuries* upon that Subject.

By *Samuel Purchas*, Master of Arts, and Pastor at *Sutton* in *Essex*.

Entered according to Order.

LONDON, Printed by *R. I.* for *Thomas Parkhurst*, to be sold at his shop, at the Three Crowns in Cheapside, over against the Great Conduit, 1657.

M.R.
638.12
P985T

TO THE RIGHT HONORABLE, Truly Noble, and Religious LORD, *Robert* Earle of *Warwick*, Baron of *Leez*, &c.

RIGHT HONORABLE,

THE Creatures are the Book of Nature, as said *Anthony* the Hermite, who being demanded by a Philosopher, how he could possibly spend his time in the Wilderness, seeing hee was destitute of Books? answered, My Book, O Philosopher, is the nature of all things created by God, which when I please, I can peruse and read. The world is Gods Library, God manifested and drawn out; and all the creatures are

Socrat. hist. Eccles. l. 4. c. 18. Nicepho. l. 11. c. 43.

as Glaſſes, in which wee may ſee, and as Scaffolds and Ladders, by which we may aſcend and draw nearer to him: For God is a light too ſtrong for our ſenſe, therefore we muſt (with him in the ſtory) look for the Sun in the Weſt, not in the Eaſt; behold the Lord as he is reflected, and refracted, firſt in the glaſs of his Creatures, and his Works: And then ſecondly, in the face of his deareſt Son.

God in the School of Nature, uſeth a method ſo ſuitable and correſpondent to our dulneſs, that our meditations ſhould not want in the Creatures Volumes (I may ſay) wherein to read moſt excellent admonitions and inſtructions: In every creature are they engraven in ordinary characters, and in leſſer a print; as in the Scriptures, they be written in capital letters once, the Creatures are as a bright glaſs, wherein we may behold our God; For as God is a glaſs in heaven, wherein all his creatures are ſeen, ſo are the creatures a glaſs upon earth, wherein we may behold and know our God. They are Trumpets of his honour, witneſſes of his worth, bellows

Sir John Hayward, Davids Tears.

lows of our love, ſpurs to our dulneſs, and judges of our unthankfulneſs.

There is ſome good in all creatures, the meaneſt hath a beam of Gods Majeſty, yet ſome have more than others, the Bees more than (almoſt) any. That a little neglected creature ſhould bee ſo curious in Architecture, and in the fabrick of her hexangle Combs ſhould obſerve as juſt proportions as the beſt Geometrician, we ſhould ſuſpect for an untruth, if wee ſaw it not daily practiſed by them. Oſvald Crollii baſilica chimica.

Nicoſtratus in *Aelian*, finding a curious peece of work, and being wondred at by one, and asked what pleaſure he could take to ſtand as he did ſtill gazing on the Picture? anſwered, Hadſt thou mine eyes, my friend, thou wouldſt not wonder, but rather bee raviſhed as I am, at the inimitable art of this rare and admirable peece. I am ſure no Picture can expreſs ſo much wonder and excellency as the ſmalleſt Inſect: But wee want *Nicoſtratus* his eyes to behold them.

And the praiſe of Gods Wiſdome and Power, lies aſleep and dead in every crea- Raymundus in Theolog. natur.

 ture

ture, untill man actuate and enliven it. I cannot therefore altogether conceive it unworthy of the greateſt mortals to contemplate the miracles of Nature, and that as they are more viſible in the ſmalleſt, and almoſt contemptible creatures, for there moſt lively doe they expreſs the infinite Power and Wiſdome of the great Creator, and erect and draw the mindes of the moſt intelligent to the firſt and prime cauſe of all things, teaching them as the power, ſo the preſence of the Deity in the ſmalleſt Inſects.

What ſhould bee preſented to great men, but great and goodly gifts? In this perhaps many will comply with mee, but then readily deny, that a Diſcourſe of Inſects is to bee offered to your Honour; but I eaſily trample on ſuch exceptions, for although the creatures herein handled, bee ſo ſmall that they cannot fully bee known, and (as worthleſs, and uſeleſs) bee undervalued by many, yet by judicious wiſe men, who meaſure things not by greatneſs, but by goodneſs, they will not only be prized, but praiſed; not only magnified,

fied, but admired. In all parts of natural Philoſophy, the knowledge whereof is moſt difficult; the contemplation laborious, and the nature moſt obſcure. I have (ſaith *Aldrovandus*) found that moſt difficult which is converſant about Inſects, and that for their notable, and admirable ſmalneſs, which is the reaſon (ſaith he) that no man as far as I know, hath delivered many memorable things of them: Only *Ariſtotle* of the *Grecians* have diſcovered ſome things worthy to bee known; and *Pliny* of the *Latines* ſomewhat more, which he collected from the Monuments of *Greek* and *Latine* Writers (which are now loſt) and ſome few things beſides there are, which later Writers have taken notice of, but all ſo lame and imperfect, that ſtill much remains to be added and amended; and ſo brief and obſcure, that many ſtill are ignorant and deceived. Aldrovand. de Inſect.

Scaliger is very angry with *Cardane*, that after *Ariſtotle* he ſhould write of Bees, and add nothing new, nor true: Whereas learned *Scaliger* endeavouring to confute him, is guilty of many abſurdities, I cannot Scalig. de ſubtil. exercit. 196.

not but expect to hear the ſame reproach from ſome, whom I only requeſt judiciouſly to read, and then to cenſure.

Lipſii Præfat. ad I. Saturnal.

Embroiderers, of threds of divers colours (in the new world of various feathers) make a coſtly and delightful Hanging: So VVriters out of a thouſand parcels, an uniform, and agreeing body; whom I have laboured to imitate, where I have failed, pardon my weakneſs, and accept my good will.

But my long Epiſtle is injurious to your Honours more neceſſary employments. *The Lord preſerve your Honours perſon, with your Honourable Conſort, and all the Noble Branches deſcended from you.*

Your Honors humble
and lowly Orator,

Samuel Purchas.

THE

THE CONTENTS OF THE Several CHAPTERS.

Chap. 1. *Of the Excellency of Bees*	Page 1.
Chap. 2. *Of the Name*	p. 2
Chap. 3. *The Definition and Description*	p. 3
Chap. 4. *Of the Kindes and Colours*	p. 8
Chap. 5. *Bees nature and properties*	p. 11
Chap. 6. *Bees Politicks, Ethicks, &c.*	p. 16
Chap. 7. *Of the Bees senses*	p. 22
Chap. 8. *Of the Queen-Bee*	p. 27
Chap. 9. *Of the Drone*	p. 35
Chap. 10. *Of the Generation of Bees*	p. 42
Chap. 11. *Of the Hives, and ordering them*	p. 57
Chap. 12. *Of Seats for the Hives, and Bee-Garden*	p. 61
Chap. 13. *Of the Bees-work*	p. 67
Chap. 14. *Of swarming, and hiving of Bees*	p. 77
Chap. 15. *What Flowers the Bees gather of*	p. 92
Chap. 16. *Of the ordering of Bees*	p. 96
Chap. 17. *Of Bees breathing*	p. 107
Chap. 18. *Of Bees temperature, sleep, and age*	p. 108
Chap. 19. *Of Bees Fighting and Robbing*	p. 111
Chap. 20. *Of Bees Enemies and Sicknesses*	p. 116
Chap. 21. *Of the Hony-dew*	p. 123
Chap. 22. *Of Hony*	p. 135

Camden
Camerarius
Al. Campenſe
T. Cantipratanus
Julius Capitolinus
Cardanus
Georg. Cedrenus
Cor. Celſus
Ranulph Ceſtrenſis
Chaucer
Chriſoſtomus
Chytræus
Cicero
Ped. de Cieca
Claudian
Dr. Cleland
Mr. Cobbs
Columella
Natal. Comes
Val. Cordus
Fernand. Corteſe
Mr. J. Botton
P. Botton
Mr. Cowper Biſhop
Elias Cretenſis
Pet. Creſcentienſis
Pet. Crinitus
Crollius
Ælius Jul. Crotta
Cæl. Auguſt. Curio
Q. Curtius
Cuſpinianus
Cyprian

D

Dalechampius
Dr. Day
Diodorus
D. Dike
Dion
Dioſcordes
Mr. Down

E

Jacob Ekcelius
Mr. Elton
Marcel. Empyricus
Epiphanius
Erotis
Eſtates of the world
Euripides
Euſtathius
Eutropius

F

Fazelius
Dr. Featly
Fernelius
Fran. Fernandus
Marſil Ficinus
G. Fletcher
Florentinus
Mr. Fosbroke
Franzius
Otho. Friſingenſis
Fuchſius
Mr. Fuller
J. Fungerus

G

Galenus
Mr. Garey
Mr. Gataker
Theod. Gaza
Cor. Gemma
Geminianus
Gilpine
Hier. Gixova

Robj

Rob. Gloeſtrenſis
Godignus
Godwin
Mr. T. Goodwin
Ber. Gomeſius Miedis
Mr. Googe
Gregorius magn.
Gregorius Nazian.
Mr. R. Greenham
Hil. Greg. Gyrald.
J. Ja. Gryneus
Gualther
Ant. Guevara
Guild

H

Hackluit
Dr. Hakewill
Dr. Hall
Mr. Harris
Mr. Hartlib
Dr. Harvey
H. Hawkes
J. de la Haye
Sir Jo. Hayward
Helmont
Mr. Herbert
Herodian
Herodotus
Ant. de Herrera
Heſychius
Heſiod
Hieronimus
Higinius
Hilarius
Mr. Hill
Pet. Hiſpanus
Hippocrates
Mr. Hoard
Mr. Holbroke
Hollerius
Dr. Holland
Homer
Horatius
Job Hortop
Hugo Cardinal.

I

Mr. T. Jacombe
Dr. James
Jarricius
Dr. Jeniſon
Joſephus Indicus
C. Jobſon
Dr. Jones
Mr. Johnſtone
Joſephus
Jovius
Iſocrates
Iſidorus { *Hiſpalen.* / *Peluſiot.*
Silius Italicus
Juſtine
Juvenal

K

Dr. Kilbie
Kimchie
Dr. H. King
Dr. J. King
Krantzius

L

Lactantius
Dr. Lake
Jo. Langius
Mr. Lawſon

Levin. Lemnius
Ambr. Leo
Jo. Leo
Nicol. Leonicus
Lerius
Mr. Levit
And. Libanius
Linschoten
Lipsius
T. Livie
Matth. de Lobel
Mr. Lockyer
Lucian
Lucretius

M

Mocrobius
Magirus
J. Magnus
Olaus Magnus
Majolus
Bapt. Mantuan.
Martial } *Episcop.* *Poeta.*
Matth. Martinius
Marullus
Matthiolus
Pet. Matthew
Mr. May
Menosa
Hier. Mercurialis
Mr. Merideth
Mesue
Ped. de Mexia
Mr. Milles
Jo. Miletius
Mizaldus
Rhodol. Modius
Moryson
Mouffetus

N

Nicander
Nicephorus
Nicetas
Nigidius
Niphus
Joach. Nizæus

O

Julius Obsequens
Oneficritus
Paulus Orosius
Adamant. Origines
Ortelius
Osorius
Ovidius
Oviedo

P

Dr. Page, Sanct. Pagninus
Palladius
Guid. Pannyrollus
Paracelsus
Pausanias
Pennius
Perottus
F. Picolomineus
Phavorinus
Philo
J. Picus, E. of Miran.
Pigafetta
Pineda
Geor. Piscatorius
Guil. Plantius
Dr. Playfere
Plautus
Pliny
Plutarch

Polanus

Polanus
Polybius
Porcacchi
Dr. Preſton
Dr. Prideaux
Dr. Primroſe
Mr. Purchas

R

Mr. Randal
Raymundus
Mr. Remnant
Mr. Reyner
Mr. Reynolds
Ramuſio
Beat. Rhenanus
Ribera
Matth. Ricius
Rivetus
Cæl. Rhodiginus
Mr. Roberts
Mr. Rollenſon
Hier. Romano
Roſinus
Mr. Rowlandſon
Hieron. Rubeus

S

M. A. Coc. Sabellicus
Salmeron
Hen. Salmouth
Salvian
Sands
Mr. Sanderſon
P. Sanflorus
Joaon dos Santos
Jo. Satisberienſis
J. Cæſ. Scaliger
Dr. Sclater
T. Scot
Scribonius Largus
Selden
Seneca
Servius
Dr. Sibs
J. Silveſter
Huldrichus Smidel
Socrates
Solinus
Sophocles
Mr. Southern
Spanhemus
Spencer
J. Stobæus
Mr. Stock
Dr. Stoughton
Strabo
Valfridus Strabus
Mr. Struther
Stuckius
Mr. J. Stanes
F. Stancarus
Sylvaticus
F. Suarez.
Suidas
Mr. Swift
Mr. Sym

T

C. Tacitus
Tarnovius
Dr. Jer. Taylor
T.
Tertullian
J. Ra. Textor
Theocritus
Theodoret
Theophilact
Theophraſtus
Ped. Teixeira

A. Thevet
Mich. Toxites
Maximil. Tranſilvanus
A. Turnebus
Geor. Turonenſis
Willer. Tyrenſis Arch.
Tzetzes

V

Valerius Maximus
F. Valeſius
Valleriola
Varro
Garrillaſſo de la Vega
L. Verulam
Vigetius
Vincentius
Virgil
Polyd. Virgil
Vitichindus
Fulvius Urſinus
Dr. Uſher

W

Dr. Wall
Dr. S. Ward
Mr. Watſon
Weckerus
Dr. Williams
Jod Willichius

X

Xenophon

Z

Zanchy

To

TO THE
Author upon his Phyſio-theological Hiſtory of *BEES*.

WHence this brave flame? and to what ſacred fire
(Divine *Prometheus*!) do thy thoughts aſpire?
Myſterious Nature takes it ill, to be
Dethron'd from her retired Majeſty:
Thy daring hand hath taken off her dreſs,
And ſhew'd her naked, mid'ſt her hid receſs:
Thou haſt broke up her Archives, and haſt ſet
To ſale, her Jewel, and her Cabinet;
Her Iliad in her Nut; and now thy Bee
Is not her work, but her Anatomy,
Which thou haſt handled too, at ſuch a rate,
That 'twere but one ſtep higher to create;
Thou haſt her Miracle ſo here made known
'Twas ne'e hers once, more, then 'tis now thine own;
Hers at the beſt was natural, but thine
Is through thy learned labour made divine;
Paradiſe is her flowry Garden, whence
Shee ſucks Elixir all, and Quinteſſence,
This ſacred ſympathy wee ne'e did know
Till thy high ſoaring ſearch had found it ſo:
That which wee all have yet admir'd was but
The ſhell, thou only feaſtedſt on the Nut;
Whilſt towring far above our common ſenſe
Thou takeſt heaven by thy violence;
And with thy ſoul on wing, invad'ſt the ſky,
Bringing us Angels Manna from on high
In pious raptures; thus this work of thine
Gives us another table Smaragdine;

Above and Here are like, the Gordian Twiſt
Is thus unravel'd by our Triſmegiſt:
Now Heaven and Earth in one combin'd we ſee;
And God and Nature center'd in a *BEE*;
This wee muſt owe to thee, thy learned ſweat
Bankrupts, and leaves us dying in thy debt:
Pardon mee then if unto thee I do
Aſſert the keyes of Earth and Heaven too:
Gather our Bees! and hiv'd from Envies harm;
Thrive may thoſe ſtocks from whence theſe Graces ſwarm.

N. T.

Upon the Authors Elaborate Treatiſe of *BEES.*

BRokers in verſe condemn it as a crime
To preface Tiſſue with a ragged rime.
Oh this doth ſtrike mee dumb! and bids mee look,
I draw no Curtain to eclipſe thy Book:
No, if my Lackey-muſe ſets out, poor ſhee
Runs but to take up eyes to gaze on thee:
Let others ſound thy worth in ſilver mettle
Whilſt to thy Bees I tang a jarring Kettle.
My Muſe had kept at home, but that ſhe ſees
Even Drones themſelves indulg'd amongſt thy Bees:
I've ſometimes view'd thy ſmall Volaticks flye,
Like golden atom's hov'ring in the ſky;
And then deſcending gently one by one,
Like curled locks diſhev'ld from the Sun,

This

This object pleas'd mee well, but when I spy
By wings of fancy poys'd with gravity:
Thy thoughts to soar a higher pitch, why then
My mind's unpleas'd, but better pleas'd again:
I've peep'd into thy Hive, thy Book, and I
Finde Bees t'have less of art and industry;
And sweetness too, and so must needs confess
I long to taste thy hony from the press.
Each page a comb, each word's a bell from whence
Mellifluous dew's distill in eloquence.
Were I to lead thy troops, hither I'de flye
On every leaf to prove their Chymistry.
Here tyr'd and weary thoughts may sweetness scan,
And re-assume new life with *Jonathan*.
Thy observation's quick, what thou hast writ
Speaks thee Dame Natures cheefest favourite.
The thoughts of various Authors thou hast shewn,
And prov'd them flye-blown fancies of their own:
Thou knowest each Bee, their flight, and tracts their stage,
And so hast wrote a second Pilgrimage.

One hony'd ore a Tyrants eye to feast
Did run the Gantlope through a Hornets neast.
Wasp-like, who at thy Book exceptions take
Makes thee a Martyr for thy sweetness sake.

Jo. Angier.

Ad venerabilem Apiarium Authorem, Mr. *Sam. Purchas* Miniſtrum, de Poly-hiſtorico ſuo Mellificio; nec non lectorem candidum, carmen Anagrammaticum.

Samuel Percas } Nomen
Mel, curas apes } Anagram.

MEl curas & apes, mage oves has diligis illos
Nec fugis, aut ullo negligis ipſe modo.
Sancta Theologiæ pandis myſteria docte
Sic tua conſcribit ſuada Philologia
Rhetorem & hiſtoricum libro nunc aſpice docto
Ecce Miniſter ovium, atque ecce Magiſter apum.

Ja. Norricius.

To the Reader upon the Philo-logical and Theo-ſophical Treatiſe of BEES.

WHat *Ariſtotle*, *Pliny*, wrote before,
Virgil, *Aldrovand*, *Scaliger*, *Butler* more;
In this one book ſee thou mayeſt more than any,
And marvell not if that I do ſay many.
All that have written of theſe Inſects nature
So much, which very little are in ſtature,
I do not know whether for mine own part

Bees

Bees nature moſt, t'admire, or Maſters art;
Who centuries hath perus'd, his eloquence
Beſides experience, mark t'hiſtory,
Philoſophy, ith' Treatiſe, Theol'gy,
You may call't an Encuclopedy, all
For tongues, arts, matter, pos'tive polem'cal;
A Bee-hive for thy life, moſt full of hony
Purchaſe then this *Purcaſan* work, thy mony
'Twill far excell, exceed to thee as gainfull,
As 'twas though pleaſant, to the Writer painfull:
For a ſubject ſo good you cana'c leſs give,
Give then good words, and praiſe it while you live:
Or elſe amend, chooſing, or to do better,
Or to deſiſt from the cenſorious letter:
There's hony in his name, more in his book,
Which is melliſluous, come taſte as look;
Make this Anthology Pantol'gy thine
Ambroſian *Purchas* Nectar Divine.
I wonder not it is ſo natural
For thee to be 'bout Bees hiſtorical.
This Treatiſe framed with ſuch artifice
Shews ſome paternal meteemſychoſis:
Though ſome Antilogiſts ſhall vilifie
The Work, Work-man, both have my Eulogy.

θητὰ
Critical, the letter of condemnation, Beeman. See the Latine Anagram.

To Zoilus.

Can *Mimus* do the like, will *Momus* like
This Polanthean Pantologick book?
With tongue or pen do not perſtringe or ſtrike,
I'le not be Mome, nor Mime, to be I look
While Bees ſhall be, and ſhall their Hony give
This Bee-maſters name, fame, when dead ſhall live.

Ja. Norrice Paſtor of *Cavendun.*

Upon the Authors Learned and Elaborate Treatise of *BEES* in both parts of it, an Encomiastick.

READER, read here a book of *BEES* dissected,
Their nature, stature, feature, parts detected;
Their feeding, breeding, building, industry,
Their prudence, providence, sagacity,
Their peace, their war, their love, their mortal hate,
Their Prince, their Leaders, order in their state;
All these and more unfolded in such wise,
That it a Hive of glass, thou mayest surmise.

Then magnifie this little Creatures Maker,
That (it) of such endowments made partaker;
Wherein his Wisdome, and his power Divine
(As in the heavens above) do clearly shine
In text hand-writing; what thou there dost see,
In smaller letters here imprinted *Bee*.
Next praise the Authors *Bee-like* diligence,
His reading, learning, long experience.

On the second part. Eccleiast. 12. 10.

And then read on to that which follows next,
The Preachers Sermon on this pretty Text,
Doctrine distilling like the Hony-dew,
Mellifluous, most pleasant, upright, true.
O gather then the Hony from these leaves,
Those vices flye to which thy nature cleaves.
And learn those vertues which the Bees do teach.
Thine understanding, else this book don't reach.

By his loving Friend and Neighbour,
T. P. *Master of Arts*, P.P.

Ad

Ad doctum Authorem, in Mellifluam ipſius de Apibus hiſtoriam carmen, ἐγκωμιαστικὸν.

Floribus eximiis mel Apes producere luſtrant
Sic (Purchas) *libris roſcida mella legis.*
Quæ veteres ſcripſere diu, tu teſtibus æquis
Arte probas; Laudem dulce loquatur opus
Tractatus doctus, permiſcens utile dulci;
Stillans delicias Religione liber.
Hic labor, hoc opus eſt, Apibus medicina ſalubris
Conditur, ac medicam porrigit arte manum.
Myſtica naturæ narras, amor urget habendi
Nectar Apis? placida diſcutis hiſtoria.
Gratulor ingenium, librum dum mente revolvo,
Mel ſapis ſcriptis cum pietate novum.

Guil. Rogers *A. M.*

Upon the Authors Treatiſe of BEES.

WHat Creature iſt' that God hath made?
But emblems forth ſome ſignal ſhade
Of that divine and higheſt power,
Who makes unmakes, all in an hour,
The ſea is fill'd with ſmall and great,
The earth as full, and moſt compleat,
The glorious heaven beyond compare,
That place where Saints and Angels are:
The baſeſt worm, who eats but duſt,
Speaks glorious praiſe, and that moſt juſt;

Unto

The Contents.

Chap.23. *Of Tree-hony* p.147
Chap.24. *Of Waxe* p.157
Chap.25. *Obſervations and diſcourſes Hiſtorical and Fabulous* p.161
Chap.26. *Obſervations, Phyſical, &c.* p.169
Chap. 27. *Of divers kindes of Wild-Bees* p.179
Chap. 28. *Of the Waſp* p.181
Chap. 29. *Of the Hornet* p.186
Chap. 30. *Of Humble-Bees* p.188
Chap. 31. *Of Graſhoppers* p.193
Chap. 32. *Of American Bees* p.202

A Catalogue of ſuch Authors as are cited, and made uſe of in this Tractate.

A

MR. R. Abbot
Abynzoar
J. Acoſta
Actuarius
Ælian
Æſope
Mr. Adams
Agathariſis
Raſmund de Agiles
Cor. Agrippa
Albertus
A. Alcyat
Ulyſſes Aldrovandus
F. Alvarez
Alex. ab Alexand.
Ambroſe
Andernacus
Amyretus
Jo. Anglicus
Appian
Alex. Aphrodiſſ.
Hier. Fab. *ab Aquapendente*
Aquinas
Ariſtophanes
Ariſtoteles
Athanaſius
Atheneus
Auguſtinus
Avicenna
Auſonius

B

Dr. Balcanqual
Hermolaus Barbarus
Baronius
Barrudas
Broughton
Baſil
A. Battle
Bauhinus
Gorop. Becanus
Beda
A. Bellunenſis
Pet. Bellonius
Bernardus
Pſeudo-Beroſus
Bodinus
Bonfinius
Mr. Bolton
Gio. Botero
Mr. Brathwayt
Geor. Brawn
Mr. Butler
Buxtorfius

C

Cajus
Aloyſ. Cadomuſtus
Cæl. Calcagninus
Calepine
Calvinus

To the Learned Author of this *Bee-like* laborious Treatise.

WHat shall I praise the Author or his pen,
Or run division t'wixt them both? oh then
My Muse would tire, his name needs not my layes
His fathers Pilgrimage earst ware the bayes;
I then will sing the praise of Monarchy
In female sex whose curious industry,
Just rule, sweet concord and frugality;
Mortals amaze, when into it they pry.
But learned *Purchas* spight of spears is bold
Their Castle to assault, and doth unfold
Their nature, kindes, products, and curious works,
Their valour, order, wealth, and what ere lurks
Within the concaves of their golden wall
He hath spied out, and doth impart to all
Much worth's in least of things I now beleeve
The busie *Bee* hath taught me from her Hive.
Sith Natures Ark's broke ope, come all and view,
Mysterious arts, secrets both old and new.
But herein doth excell his proved skill
Surpassing far the rudeness of my quill.
Grave meditations both Moral and Divine,
He hath extracted from dark Natures mine;
Much labour hath procured this pretious oar,
And gathered hony sweet suck'd from each flower;
And thus by imitation truly wise
He doth not scorn to learn of puny flyes.
Thank then the Author, admire the little *Bee*,
But give the God of Wisdome praises free.
Muse now be silent, let himself relate
The rare news he hath brought from *Scithian* state.

Jo. Fisher.

ERRATA.

PAge 9. l. 6. blot out I in Scaliger, p. 10. l. 3 blot out not, p. ib. l. 14. r. about the Cape de brun Speranza, ſo black, yet both under the ſame Tropique, why the Abyſſines are but Tawny Moores, when as, &c. p. ib. l. 16 r. are very black, p. 12 l. 38 r. quieſcent, p. 15. l. 22. r. Aldrovandus, p. 30 l. 34. r. out of, p. 30. in marg. r. Pod. de Mexia, p. 35. l. 17 r. waſters, p. 42. l. 1. for may r. nay. p. 44. l. 31. r. Ariſtotle: p. 45. l. 5. r. ſit: p. 46. l. 37. r. milk: p. 47. l. 28. r. analogous: p. 49. l. 37. for none, r. any: p. 51. l. 22. for for, r. from: p. 52. l. 6. r. excrements: p. 75. l. 20 r. *ſicula*: p. 75. l. 21. r. Hymetti; p. 75. in marg r. Miopotmus; p. 97. l. 5. r. Mouſe; p. 99. l. 16. blot out then; p. 101 l. 19. r put; p. ib. l. 24. r. upon the empty hive; p. 104. in marg. r. Fazellus; p. 110. l. 34. r. tattered; p. 115. l. 16. r. ſecond; p. 119. in marg. r. Joaon dos &c. p. 122. l. 4. for after, r. often; p. 128. l. 10. blot out their; p. 130 l. 14. r. Pancyrollus, p. 131. l. 4. blot out of; p. ib. in mar. r. Pancyrollus; p. 133. l. 20 blot out dew; p. 138. l. 32. blot out aſcribes; p. 144. l. 10. ſhould have been placed p. 143. l. 35; p. 157. l. 28. r. Hollerius; p. ib. l. 35. r. Gaza, p. 160. l. 34. blot out which; p. ib l. 35 r. on the other ſide; p. 163. l. 10. r. Hermonax; p. 164. in marg. r. Tit. Livius; p. 165. l. 8. r. Olynthia; p. 173 l. 7. for one ounce of; r. out of; p. 179. l. 29. r tranſverſe; p 185 l. 32. r. once, p. 190. l. 1. blot out if; p. ib. l. 20. r. continue; p 195. l. 27 r. ruſſet; p. ib. l. 36. r. yet within all, &c. p. 201. l. 5. r. once; l. 16. r Diacomus.

ERRATA in the Second part.

Page 258. in marg. r. D. Dike; p 262. l. 21. r. return; p. 267. l. 21. r. maketh them conſiſtent; p. 310. l. 14. r. ſtubborn; p. 311. l. 5 r. make; p. 318. l. ult. r. ſpat; p. 345 l. 20. r. wrought; p. 348. l. 32. r. reine; l. 33. r. Bees; p. 364. l. 15. for tangle, r. taile; p. 370. laſt line, for Drones r Doves. p. 374. l. 6 r Plaucus; l. 24. r. in Pitchers; l. 26 r. advantage; p. 376. l. 17. r. admit; l. 18 for were, r. are; p. 381. l. 12. for to, r. To; p. 382. l. 8. r. *queſtium*; p. 386. l. 27. r. which is; p. 387 l. 9. r. laſt.

A Theatre of Political Flying Insects.

Chap. I.

The Excellency of Bees.

BEes are the most excellent of all Insects whatsoever, and expresse both worth and wonder in all their waies: They only afford delightful food, and pleasant nourishment for man, whereas the best in other kindes serve only for Physick, or the pleasure of the eye, or the delight of the ear, or the cloathing of the body: the most part whereof is by these also some way or other abundantly supplyed; so that natures power is no lesse in Bees, than in the greatest, and most perfect creatures; for hee that made the Camel, and the Elephant, made the Bee too. This is somewhat, but yet not enough; because they are the most excellent Creatures for Prudence, and profit, except man; and indeed the divine wisdome hath thus ordered it, that wee might understand that Prudence consists not in the greatnesse of the body, but in the minde, which hath no need of magnitude, but as it is lesse, is so much the more excellent. Here is *magnum in parvo*, a little in quantity, but much in worth and quality.

Jo. Rainf. Text. Epither. Dr. Jones Comment in Epist. ad Philem. Carden. l. 7. de Varietat. rerum.

The Bee is a little creature, but Gods smallest springs prove at length main Oceans, his least beginnings grow into great works, great wonders.

Who can imagine that so many pleights and joints, con-

nexions, and concatenations, should bee orderly disposed in so small a fabrick? That in a body so little, the joints should move so actively, the wings stirre so nimbly, the sting penetrate so deeply, the senses utter forth themselves so sharply, Nay, the lungs, (though scarcely visible) to breath so powerfully, doth any then glory, or is proud for his skill in various arts! What in this respect is wiser, or better instructed than the Bee? What Artificer is so various, what Painter, what Geometrician can imitate her works?

Chrysost. Comment in Epist. Paul ad Philip. c. 2. v. 4.

Why do wee then marvail at the Tower-bearing shoulders of Elephants, and not rather where Nature hath planted so many senses, and such industry in such little bodies? where is hearing, seeing, smelling, tasting, and feeling, yea where are the Veines and Arteries in these so little bodies, which a little distance from us can scarcely bee seen with our eyes: And what shall wee say of the parts of the same? and yet in this little Bee is such sagacity and industry, as the like is not seen in creatures of greater quantity.

Pliny saith, no creature can live or move without them.

The great Artifex of Nature hath enlarged the smaller creatures with wisdome, and invention, so teaching that greatnesse is to bee found in meannesse (as the Apostle saith) strength is infirmities. Imitate if thou canst the Bees buildings, the Ant hills, or lodgings, the Spiders nets, the Silk-worms webbs.

Tertul. adversus Marcion. lib. 1.

Such therefore are not a little mistaken, who affirm that there is neither much strength, nor yet such beauty in small creatures, as in the greater; nay, that whereas the greater, as the Elephant, and Horse are profitable, the lesser serve only to offend, whereas what Creature for profit can compare to the Bee, or the Silk-worm?

Ant. of Guevara famil. Epist.

And though the greatest thing the Vulgar praise her for, is her laborious industry, yet indeed the least thing that may be praised in her, is her industry.

Dr. Barns 5th day.

For, If old times admire Calicrates
For Ivory Emmets, and Mermecides
For framing of a rigged Ship so small,
That with her wings a Bee can hide it all.
Admire wee then th'all wise omnipotence,
Which doth within so narrow space dispense
So stiffe a sting, so stout and valiant heart,

So loud a voice, ſo prudent wit, and art:
Their well rul'd ſtate, my ſoul ſo much admires
That durſt I loſe the reigns of my deſires,
I gladly could digreſſe from my deſign,
To ſing a while their ſacred diſcipline.

CHAP. II.

Of the Name.

IN *Hebrew* a Bee is called, דְּבוֹרָה *Debora*, from the order of their work, which they frame with admirable art and induſtry; Among the *Greeks*, Bees had various names, according to the variety of Nations, and Countries, but the moſt Vulgar was, μέλισσα (and *Heſiod* hath μελία παρὰ το μέλι, from Hony, whereof the Bee is the Chymical preparer) and they are alſo called, μέλιτται απὸ μελετῶ, becauſe no Inſect is ſo profitably induſtrious. The *Latins* call them *Apis* and *Apes*, becauſe as *Virgil*, they are *trunca pedum primo*, firſt bred without feet: And indeed the Worm or Potential Bee, called by the *Greeks* χάδλον, *Schadon*, is without leggs, but after her Metamorphoſis (of which afterwards) ſhee comes forth a ſix-legged creature, but becauſe this Etymology anſwers not Analogy, as other compounds, it is ſuppoſed by others to bee a ſimple word: So alſo *Servius* and *Pyr. Perottus* in *Cornucop.* *Lucian* therefore calls them, ζῶα ἄπτοδα, A. *Canlep. in dictionar.*

The word Bee, according to *Goropius*, is originally Dutch, and therefore Engliſh, and ſo compoſed (ſaith hee) becauſe it affords us many things: Wax, for curing of dolours, wounds, Ulcers; for lights, Ceare-cloath, and many other things; and for Hony it would require a daies work to declare the benefit and worth thereof. And though theſe bee great benefits, yet there are more excellent and remarkable to bee obſerved from this Creature: For every Common-wealth, every Kingdome receive their beſt directions and precepts, whereby the duties of the King towards the people, and of the people towards the King, and of the Citizens among themſelves are

Gorop. Becan. Hermath. lib. 6

moſt clearly taught. If they hold forth any patterns to us, wee readily write after them, and practiſe them. For it ſignifies alſo, ſaith hee, to command or rule, becauſe it is the ſame ſupream Majeſty, that affords and beſtows all things, and commands all things. Wherefore the Architect of words by a ſingular prudence hath commended to us Monarchy, included in certain limits by the name of Bee; which ſtate whoſoever attains, it is neceſſary that hee imitate the King of Bees, who ſo deports and carries himſelf, that hee is beloved, provided for, and protected by all the Bees; and yet in the mean time ſo farre from offering injury or wrong to any, that he hath no ſting to hurt any (ſo *Goropius*) but which is truer and better, hee never uſeth it to the hurt of any.

CHAP. III.

The Definition and Deſcription of a Bee.

A Bee is a Flying Inſect, four winged, ſix legged, beſt skilled in making of Hony, her ſhape is little, brown, bowing, oblong, not globous, as ſome: Her eyes are covered with a horny membrane, or tunicle for their better defence and ſafeguard; they are of a ſhining black, like Jet, tranſparent as Glaſſe, immoveable, contrary to *Ariſtotle*, who ſaith all Inſects move their eyes, as four-footed beaſts their ears; not ſunk within their heads (as *Mouffetus*) but ſomewhat prominent, no eye-brows: Their eyes are placed on the outſide of their cheeks, or rather are in ſtead of cheeks; ol long, greater above than below, through which the ſpecies of things viſible are conveyed to the common ſenſe. The horns are called by *Ariſtotle*, *Antennæ*, becauſe they hold them forth before them; They are very pliable, and readily bending almoſt every way: they grow almoſt at the top of either e, e, for defence with two joynts, one cloſe to the head, the other towards the middle, ſo that ſhee can put them forth at full length, when ſhee will, and draw them downagain cloſe to her head: And they are the proper inſtruments of the ſenſe of feeling, by which, with the leaſt touch, ſhee ſuddenly ſenteth any tangible object.

Mouffet. Theatr. inſector.

Ariſt. de partibus, animal. lib. 2. c. 13. and alſo Plin. lib. 11. c. 37.

The

The Drones eyes are farre larger, being almoſt two thirds of their head, with two moveable wreathed horns, growing out together between the eyes, but extending like a fork.

For gathering her proviſion, ſhee hath two inſtruments, her fangs, and her tongue; her fangs in faſhion of a pair of pincers, hang not as the jaws of other things, one over another, but ſide-waies, one againſt the other: Her tongue is of that length, that her mouth cannot hold it, but being doubled between her fangs under her throat, it reacheth to her breaſt; it is divided into three parts, whereof the two outmoſt ſerve as a caſe to cover the third, which being the chief, the Bee in her work, putteth forth beyond the other, and draweth in again as ſhee pleaſeth, and this third is likewiſe parted into three; ſo that there are five in all.

In their fangs or chaps, wherein are their teeth, their principal ſtrength conſiſteth; for in their conflicts, where they ſlay one with their ſting, they kill twenty with their teeth, quickly biting off the wings, or breaking the leggs of their adverſaries: And therefore Mr. *Butler* was ſomewhat deceived, who accounteth this pinching of other Inſects (for againſt them only do they uſe them) to bee rather a chiding, than a fighting, a warning, than a puniſhment; being indeed a deadly and mortal inſtrument of revenge; ſo that after a battel you ſhall ſee them lye ſprauling, hopping away, and crauling in great multitudes, either drawing on the ground one, or more of their leggs, or doubling the nether part towards the ground, or turning the ſame awry to the one ſide, or other, but as many as are bitten, within a ſhort ſpace will certainly dye.

They runne at firſt limping away, but ſurvive very little: And that they are not ſtung to death, that in ſuch variety of motions, proclaim their various hurts is very apparent.

Firſt, Becauſe there is no ſting appearing in them; nay, more die lamed in their leggs, than hurt in all other parts; and beſides, their leggs are not ſuſceptible of a ſting: And if you obſerve many of them, before they be let go by their Antagoniſts, the Victor retains her ſting ſtill: But ſaith one, their skin is ſo thin and dry, their ſpears come away again without hurt to themſelves; but this is not ſo, for I have often ſeen them ſticken in their backs, and breaſts, and alſo between their pleighs, or ringles of their. Mr. Remnant. Hiſt. of Bees. c. 3.

their nether part, and the ſting herein detained. It is true in a great Carnage, very few are ſtricken with their ſting, or ſpear which they are loath to uſe, when their fangs will right them; as they will againſt Inſects, becauſe it is deadly alſo to themſelves.

——*Animamq; in vulnere ponit.*

But their ſtings they chiefly uſe againſt men, beaſts, and Fouls, for knowing that their bitings are little, or no way prejudicial againſt ſuch able creatures, they will kill themſelves to injure others: for their ſting like a barbed arrow, once entred into skin or fleſh, is holden ſo faſt, that they cannot draw it out again; and when they would bee gone, leave therefore a part of their entrals faſtened to it, ſo that when they overcome by ſtinging, they get a Cadmian victory, loſeing thereby their own lives. They are hairy almoſt all over their bodies, eſpecially the fore-part.

A Bee hath four drye pellucid skinny wings (and ſo have all Inſects that live in fields, and wander about for their food) two are growing near together, on either ſide of their ſhoulders, but the inmoſt are ſomewhat ſhorter than the other, leaſt they ſhould hinder their flying; and theſe ſwiftly convey them into every place (though ſome miles remote) round about their habitations, until by often uſing of them, they grow torn and jagged (the infallible characters of old age, and death) and are unable to ſupport them, yet will they venture forth (but with the price of their lives) not being able to return.

Ariſtot. de partibus animal. lib. 4. c. 6.

The hinder part of their bodies is full of ringes, or pleights, of which this reaſon is given: the beginning of motion muſt bee in ſome part, which if it were hard, could not be moved, but with the leggs, as Crabbs, but if it were all ſoft, it could much leſſe be moved, becauſe there is nothing firm; and therefore there is a neceſſity of theſe ringes, that interchangeably the hard parts may be mixed with the ſoft.

Cardan. de ſubtil. lib. 9.

Their tails are ſomewhat ſharp (the Drones more obtuſe) within which is their ſtings joyned to their entrals, which ordinarily lie hid (as *Ariſtotle*) leaſt they ſhould bee ſpoiled, but they readily exert, and put them out on all occaſions rather (as I ſaid)

said) to offend men, and beasts, than their own kinde: there is another use of them for the consumption of the superfluous humidity. Avicen de anima. lib. 8. c. 3

They have a place for evacuation under them, and for generation also, as some conceive. Her feet are six, dew-clawed, pliant, full of joynts, hairy; and as it were, two toes at the extreamity of either foot: her hindmost feet are longest, that shee may put them forward to her formost, which receive from her tongue the Bee-bread, and wax, and working it on the thighes of the hindmost, shee stands in the mean time on the middle-most; and though shee can, and doth ordinarily stand and go on all her feet, yet the two foremost have with her the use of hands, therewith shee stroaks and cleans her eyes, before her setting out, but principally in her working for the disposing of her labours to her thighs. All her feet are scabrous, and rough, to take hold at the first touch, and not that the flowers which they carry may readily stick on them, as one saith; this cannot bee, for they carry no flowers, but suppose him to understand the Bee-bread gathered of flowers, yet still he fails, for this is carried on the thighs, and only of the hinder feet. Aldro. vand. de Insectis. lib. 1.

In their head is a brain, their back and breast is a kinde of reddish fibrous flesh, in their stomach, is a heart and other necessary members (of which more afterwards) in the hinder part of their bodies, is a little bottle, or bladder (it is not in the stomack, as *Mouffet* delivers) the mouth of it reacheth, or openeth into the stomach.

In this they carry hony, which with their heat, they defecate, purge, and concoct, whereby it lasts longer than all Aerial Hony, or Manna, and rarely, if at all, corrupts. Sometimes they carry water likewise in this bottle, and not in their bill, according to Mr. *Hill* his expression, nor yet in the soft mossiesse of their whole bodies, as hee also delivers; they have but one contracted entral, which extended, is as long as the body: The excrements are liquid, fluid, and yellow. Mr. Hill Treatise of right ordering Bees.

Aristotle in the Description of the *Chamelion*, a vile (and in many Countries a Vulgar) Creature, is very exact, particular, and large. *Scaliger* having commended this, and wished for like diligence in others, saith, My judgement is, that a Philosopher must Julius Cæsar Scaliger. com. in Aristot. de Hist. Animal. lib. 2. c. 14.

must omit nothing, for though some things bee known to some, yet it is a secret to many, wherefore, whosoever writes, seeing hee writes to all, must do this common courtesie to all.

I question not, but that many will account mee too full, nay, tedious many times in this discourse; but I cannot shut a long foot into a little shooe, nor enclose so many Iliads of obser-
Eccles. cap. 11. v. 3. vations (as one did the Iliads of Homer) in a Nut-shell; for this would prove an *indecorum*, for though the Bee is little among such as flye, yet her fruit is the chief of sweet things; and shee is full of wisdome: and as the great Ocean hath in it things creeping innumerable, both of small and great beasts, so doth the Bee afford observations innumerable. Politicall, Morall, Physicall, and Metaphisicall, it is no wonder then if the Fishermen in this Sea cannot take all, yet with industry may they have draught enough, and such plenty of various speculations as may delight, if not satisfie the patient Reader. Too much curiosity may drown us with *Aristotle* in the bottome of the Sea, or burn us with *Pliny* on Mount *Vesuvius*.

CHAP. IV.

Of the Kindes and Colours of Bees.

Aristot. de Hist. Animal. lib. 9. c. 40. *Aristotle* reckons up nine sorts of Bees, and *Scaliger* commends this distribution, wishing hee had been so exact in other creatures, whereas here hee abounded more in words, than things. *Albertus*, herein *Aristotles* Ape, enumerates as many, but
Albert. Mag. tract. 4. c. 2. in strange and barbarous termes, which it seems he forged in the shop of his invention: But whatsoever the Ancients have related concerning diverse kindes, and some Neotericks, to appear as knowing as any in former ages, have described; wee in these parts of the world acknowledge (because we know) but one sort of Domestick hony gathering Bee: Some indeed live in woods, as wild, others in hives, as more familiar and milde; but these interchangeably shift their habitations: And I question not, but the wilder (because more remote from the company of men) by familiarity will prove as gentle as any.

Aristot. de Hist. lib. 9. c. 19. *Aristotle* commends a litde round Bee in the first place, and in the

the next that which is somewhat long, and in shape (not colour) like a wasp. But (as I said) wee have in these parts of Europe, but one sort of domestick Bee. And yet *Pliny*, *Varro*, *Columella*; and in a word, all receive this distribution of Bees from him; And which is more, hee confounds the Drone into two sorts, a Thief and a Drone, which *Scaliger* reconcileth well thus, that by the Theef is to bee understood that which others call a Drone.

Varro citing *Menecrates* tells us of three kindes of Bees, one black, a second red, a third party-coloured, which hee commends for the best. Varro de re rust. lib. 3.

In all the Islands of the *Moluccas* their hony is made of certain Flies lesse than Ants. It is a report not confirmed by any, but supposing it true, the Bees (not Flies) were small, like unto the *American* Bees, and the Ants great, such as are in some parts of the *Indies* greater than our Flies. Pigafetta.

Moreover, there is some difference in the bigness of Bees, but it is accidental, for they that are loaded (especially with water or honey) seem greater and longer than those that are empty. The Nymphs also when they come first abroad are not grown to the full bigness, which afterwards they have; and the old ones do wither and become little again.

Likewise in these three Ages their colours also do vary; for in their middle age they are brown, whereas before they are more pale, and at the last they grow grey, or whitish again, but these are differences of Bees in the same hive, and not of one hive from another, since these divers sorts are in every Hive.

The report is, That all Bees were at first of an Iron colour, but for feeding of *Jupiter*, had this reward bestowed on them to bee changed into a golden colour. But not to insist upon Fables. Natal. Com. Mythiolog. lib. 2.

In some Countries there bee white Bees, *Aristotle* saith, in *Pontus*. Many such are in *America*, not because they are thinner, or of a more transparent substance, or feed more finely as some, rather they are a fainter and feebler kinde of Bees, for white is a penurious colour, and where moysture is scant, so blew Violets, and other flowers, if they bee starved, turn pale and white. Some assign this as a cause of colours, the excremen- L. Verulam Silva Silvarum cent. 1. 5.

Unto that God who made us all
In his own way; myſterial.
The eye of man is over dim
To ſee the glory that's in him:
His hinder parts wee may behold
Which hee in Nature doth unfold.
Here is the *Bee*, a creature ſmall
Which *Sans*, the reſt, may teach us all
His pains, who hath this *Bee* expreſt,
Shews whether *Bee* or *Drone* be beſt;
Who reads this work ſhall therein finde
A skilful pen, an honeſt minde.
Peruſe it well, and thou ſhalt ſee
More Hony here than in the *Bee*.

Jo. Leare Miniſter of *Little Stambridge*.

In Meliſſologiam a viro omnifariam docto Domino Purchaſo Elogium.

PLurima mandantur chartis de Apibus Monimenta,
Parvi at momenti; plaraque fictitiis
Atque putatitiis vanis ſunt ſcriptore ferta,
Mundus vult falli credulus & fatuus
Falſum pro vero torpenti Comate preſſus
Devorat, (hinc ſophia maximus ille labor
Negligitur) ſatis eſſe putans in verba Magiſtri
Jurare, indubium quicquid id ipſus ait
Amplectens: Genio arridet fallacia dulcis
Quodque fovet pigrum ſemper erit placidum.
Sed latet in puteo veneranda ſcientia fundo
Anilare ac debet continuo rigidus

Qui

Qui studet optatum tandem comprendere Adeptum
Ille nucem frangat qui volet & nucleum.
Hoc iter ad verum, quo tu mi Purchase docte
Tendebas, credens nobilius sapere
Ex rebus quam libris, mox commercia agebas
Parvis cum Insectis in quibus ipse Deus
Emicat illustris quorum Idioma tenebas.
(Qui Polyglossus eras) ingenio facili.
Numinis hac tibi pandebant Magnalia summi
Atque loquebantur scibile quicquid erat
De esse suo, absque mora tu Pyramidalia tecta
Ingrediens lustras Dædalea opera
De coitu, Genesi, partu, pastuque stupendo
Horum quid regimen, quæ Politeia manet
Illis contemplaris, quæ ad civilia bella
Spectant, ad pacem quomodo sint reduces,
Ambrosium succum quis sit modus eliciendi
Stirpibus e variis arte sua Chymica.
Insuper his de parvis mille Arcana recludis
Mellificis, penitus quæ latuere alios.
Quocirca tibi qui debetur honore rependet
Quicurque ingenuus, proferet & merito
Cunctis hac in re palmam præripuisse.
Plus & Apes viles instituisse suum
Impigrum Dominum de Diis, morum probitate
Oeconomi cura, regis & officio
Quæ spectant populum quam immensa volumina quorum
Lector in hoc solo nititur ἄνλῳ ἔφῳ.

G. T.

the greater; his reason is, their wings are worn and jagged, their colour black, and their backs bowing, when saith hee, the greater are smooth and beautiful (like idle women) when indeed they are originally of one magnitude, but growing old, their bodies, are small thin, and grey, and their wings torn and tattered, a certain symptome of an approaching death, whereas the others beauty, and lustinesse is a Crysis of their youth, not their idlenesse.

In the morning they are husht and still, saith *Aristotle*, untill one (surely the Master of the watch) with two or three loud buzzings cal's them all up as it were to work: But no such exciting sound could I ever hear; nay I am confident there is none at all. But some such like thing is practised by the Apes which some have transferred to the Bees.

Capt. Jobsons Golden trade.

Near the River *Gambra* in *Africa*, and in many other places it is certain, that the Apes gather together towards night, some hundreds in a company, and in the trees (especially near the Rivers side) dance their *Lavolita's*, and perform many strange Garbo les; but about the setting of the Sun, one of the company (called by the English Mr. Constable) with two or three loud voyces ceaseth all their disports, and after that they continue quiet and silent untill the next morning when by a like voyce they have liberty given them to play and recreate themselves.

When the Bees likewise return from work, they are (as *Aristotle*, and others) a while in a tumultuous hurly burly, and then by degrees make less noise, and less, untill one flying about gives notice as it were that they must all to sleep; But it is nothing so, for in full Hives in the latter part of the Spring, and in the heat of Summer, they make a great buzzing sound all night. Bees live in a Martial discipline like Souldiers in a Garrison, some alwaies watching and warding, understand it of the Summer season, when the chilling cold, or nipping frost doth not force them into their Hives: yet in the day time they continue it longer.

A hot Sun-shine or warmer aire (even in Winter) will quickly prompt them out of their Hives to take a short vagary near their stalls, but if the cold bee intense, they are quiescent, if not dormant.

Bees are indefatigably, that I ſay not covetouſly laborious, alwayes working, but never ſatisfied, alwayes toyling, but never coming to a period of their endeavours, ſtill progreſſive, never at their journies end, being impoſſible to bee ſtinted, and the longer they work, the more earneſt they are, and impatient of delayes, or loyterings, while there is matter to work upon in the fields, and the weather is ſeaſonable. Nay if the flowers decay and grow ſcanty; The Stocks that have enough, and to ſpare, will to keep themſelves doing, rob from their neighbours.

For every Hive, or Commonwealth, endeavours to bee a Non-ſuch, and to engroſs all within its own circumference, and by any means to make it ſelf the increaſing figure, though toyl, and reſtleſneſs continually attend it.

They are not offended with red coloured cloaths as ſome affirm, nor yet inebriated with ſweet oyntments, no nor much offended with ſtinking ſavours: I have known twenty Hives together ſtand againſt a dunghil divers years, and thrive and proſper well, yet would I not perſwade any to ſet them in ſuch a place if hee can provide another.

They expreſs not more love to their keepers than ſtrangers, but they being uſed to them with greater confidence venture among them, which ſome (more fearful) beholding fancie, that the Bees reſpect and love them more than ſtrangers; whereas would they boldly come among them, nay take them in their hands, and carry themſelves peaceably towards them (except when they bee irritated and offended before) they ſhould finde all love and favour from them. They feed not on any fleſh, nor need *Pythagoras* caveats for that purpoſe.

That ſome Bees gather not honey, but water for the King, and his guard, is a meer fable, for they mutually perform all imployments. Ælian lib. 1. cap. 10.

That there is ſuch an order that the elder Bees ſhould have a proper place in every Hive, and the younger another, peculiar to themſelves, is (as moſt of the opinions of the Ancients) a fabulous narration, for they are all promiſcuouſly mixed together.

Bees (as many other Inſects) have neither viſible bones, nor Cartilages, nor Nerves, nor fat, nor fleſh, nor a brittle ſhell,

as some land, and Sea-creatures have, nor that which may bee properly called a skin, but a body of a certain middle nature between all these like to a dry Nerve, but far softer.

Their body is divided into three principal parts, and there is motion in every part severed one from another, so that whatsoever is the reason of their life, it is not fixed to any one member, but in the whole, and therefore *Pliny* was deceived, who accords in the former, but denies that Insects, and therefore Bees have any symptome of life by motion in the head, except it bee cut off with the breast. *Aristotle* taught him this lesson, which without trial hee took upon trust (as many more.) And *Scaliger* also after him, and is not content to entertain an errour, but insolently insults over *Galen*, for placing the chief residency of the soul in the brain.

Arist. de hist. Animal l. 4. c. 6.

Scalig. com in loc.

It is true, that the heads of Eeles and Snakes cut off, live not long, when as the body lives a great while; nay a speedy way to kill an Eele, is to peirce her through the middle of her tail. Upon dissection I have found that onely the head being cut off, the horns, the chaps, and the tongue also will stir, and that a great while after the separation from the body. Now the reason hereof may bee this, Bees have the spirits diffused, almost all over, and therefore they move in their several peeces, whereas men and beasts move very little time after their heads are off: And therefore it is certain, that the immediate cause of death, is the resolution or extinguishment of the spirits, and that the destruction or corruption of the Organs, is but the mediate cause; but some Organs are so peremptorily necessary, that the extinguishment of the spirits doth speedily follow, but yet so, as there is an interim of a small time; but for Worms and Bees the spirits are diffused almost all over, and therefore they move in their several peeces.

L. Verul. cent. 4. 4. 0.

Further to illustrate this, *John Leo*, reports that men condemned to suffer death in *Egypt*, have lived a quarter of an hour, divided asunder set upon a heated Caldron, sprinkled with unslaked lime, and understood, and given answers.

Jo. Leo.

A living creature is sensible in every part, so that it can exercise it in regard of heat, and can also perform in every office that the organ, or instrument for that office is remaining; and hence are determined many controversies.

Card. de subtil l. 9

Some

Some query whether a living creature can subsist without the head, others whether without the heart? Without the head they are not sensible, but live; without the heart they are sensible, but the heat quickly decayes, and motion, and life also.

Bees revive easily when they seem dead, being brought to the Sun or fire; the cause whereof is (as before) the diffusion of the vital spirits, and the easie dilating of them by a little heat; they stir therefore a good while after their heads are off, and that they bee cut in peeces, which (as before) is caused for that their vital spirits are more diffused throughout all their parts, and less confined to organs, than perfect creatures. L. Veral Silva Sil. cent. 7. 69.

Augustine mentions the same with astonishment and wonder, supposing that no reason can bee rendred for it, but that it is a secret work of God, lest one soul should seem to bee divided into so many parts. *Aristotle* saith, that Insects are most like plants, because they have many beginnings in their essence, for as plants cut in peeces live, so Insects for a time, but plants more fully. Augustin. lib. de quantit. anim. c. 3. Aristot. de partib. animal. lib. 4. c. 6

Bees when they flye lift themselves up; thus they do when they arise from the Hive, but they can flye forth-right, without any visible elevation of themselves. *Aldrovandus* would give a reason for it, because, saith hee, they want a taile, and therefore continue not long in the aire. But this by experience is found to bee otherwise, and birds that have long tailes, yet have a jumping motion in their flight, as the Wagtaile. Arist. de hist. anim. l. 4. c. 9

When the Hives are full of Bees, and well supplied with meat, neither moths, nor any other hurtful creature can much endanger them; but when they are few and weak, they easily miscarry by every adversary; so that it is not a signe of a better sort of Bee, as *Aristotle* delivers, but onely of want of numbers or strength, when they neglect their own preservation, which sometimes they having formerly endeavoured, and finding their labours fruitrate, they grow desperate and careless; but though in number they bee but few, and therefore their dangers many; their provision little, and therefore their fare poor and pinching, yet will they not forsake their own Commonwealth to communicate of the wealth or strength of others, but without repining rest contented, yet by diligence endeavouring to improve

prove their store and numbers. But when they are so few that they cannot thrive alone, they will with a general consent (except their Generals, to whom such a resolution is deadly) sometimes joyn themselves to another Hive, but alwayes with hazard, often with destruction.

Bees delight to play abroad before the Hive, flying in and out as thick as if they were fighting or swarming, in breeding time, once a day usually, if it bee fair weather, and ordinarily at a set time, each Hive observing the same hour of the day if it bee fair; and then they will expatiate and dance the Hay in circling motions, and surrounding Vagaries; and at other times when they have been long shut up with cold, or closer weather, the first fair day they will thus abroad both to recreate themselves, and also to ease their bodies, for they evacuate for the most part flying.

CHAP. VI.

Bees Politicks, Ethicks, and Economicks.

ONe drop of water hath no power, one spark of fire is not strong, but the gathering together of waters called Seas, and the communion of many flames do make both raging and invincible elements. And *una Apis, nulla Apis*, one Bee is no Bee, but a multitude, a swarm of Bees uniting their forces together, is very profitable, very comfortable, very terrible, profitable to their owners, comfortable to themselves, terrible to their enemies.

Bees are political creatures, and destinate all their actions to one common end; they have one common habitation, one common work, all work for all, and one common care and love towards all their young, and that under one Commander, who is not an elected Governour; for the vulgar often want judgement, raising the worst and wickedest to the Throne; nor hath hee his power by lot, for the chances of lots are absurd, and ridiculous, conferring command often upon the meanest: Nor is hee by hereditary succession placed in the Throne; for often through pleasures and flatteries are they rude and ignorant of

Basil. Concio in Gordium Martyr. & Hexamer. homil. 8.

of true vertue, but by nature hath hee the Sovereignty over all, excelling all in goodlineſs, and goodneſs, in mildneſs, and majeſty.

They have all the ſame common laws, and with common care, obſerve them all, and have one common bond, not to have any thing lawful for one, which is not lawful for another; but whatſoever is lawful, is lawful for all. And they have one common reſpect, and reverence to their Commander by whoſe counſel their Commonwealth is governed; a common houſe, a common care of poſterity, common labour, common food, common generation, a common uſe and fruition of all things. Ambroſ. Hexam. l. 5. c. 21.

A Bee, like a man cannot live alone, if ſhee be alone, ſhee dies: As in the Fable of *Menenius Agrippa*, the whole body ſoon periſhed, when the reſt of the members to eaſe themſelves wronged the belly; ſo the whole Commonwealth of Bees will quickly bee diſſolved if they labour, each Bee for her ſelf, and neglect the publick. Nay the Drones, though they bee idle, yet are uſefull inſtruments for the good, and preſervation of the Commonwealth. J. Stobeus laus nuptiar. p. 67.

The Polity of Bees is admirable and imitable: *Plato* and *Cicero* after a divers manner preſcribed the form of a Commonwealth, one how it ought to bee, the other how it was of old, but both lay down this as a maxime, that a civil life ſhould imitate nature which is the beſt inſtructer. But what is Natures leſſon, the irrational creatures beſt expreſs, and chiefly Bees, and therefore *Plutarch* ſends his *Trojane* to *Virgil*, that hee might borrow a civil life from the Bees. For a civil man by natures rule is alwayes chiefe of the City, as the Commander among the Bees. Plutarch. reip. gerend. precep.

And again, hee ſaith, Bees conſerve community unto their laſt; for no man ever ſaw a Bee degenerate into a Drone, which ſome require of Civil Governours, that the vigour of their age being paſt, they ſhould live idle at home. Great ſpirits degenerate not. Plutarch. an ſeni ſit geren. reſp.

They expreſs if not great reverence, yet I am ſure great love to their Commander, without whom, they will bee, they will do nothing, and with whom they will bee any thing, go any whither, ſtay any where, bee content with any thing. Per. Matthew continuat. Gen h. ſt. of France.

The Poet elegantly thus writes,

Virgil. Georg. l. 4.

Besides not Egypt, *nor rich* Lydia *more,*
Nor Medes, *nor* Parthians *do their King adore;*
Whilst hee's alive in concord all obey,
But when hee dyes, all leagues are broke, and they
Themselves destroy their gathered food at home,
And rend the fabrick of their Honey-combe;
'Tis hee preserves their works, him all admire,
And guard his person with a strong desire:
They carry him, for him they hazzard death,
And think War they nobly lose their breath.

Polytus.

Xantippus therefore the *Lacedemonian* being General of the *Carthaginians*, said, Hee had rather serve under the Commander of the Bees, than lead an army of Ants. I say, under the Commander of the Bees, who useth not his sting, that is, exerciseth tyranny against none, and orders nothing but that which is profitable for the Commonwealth; when as they that lead an army of Pismires, that is, men who neither will, nor know how to obey, never perform any thing notable, and praiseworthy; so that aptly *Homer* describing the *Greeks*, hastening to the Oration of *Agamemnon* the General of the whole Army; and as hee calls him the Pastor of the people, compares them to Bees swiftly flying with their labours to the Hive, where their Commander is constantly resident.

Homer l. 2. Iliad.

Aldrovand. de insectis lib. 1. Cælii Calcag. Apol. pro Alfonso duce Ferrar. Cornucop. Pyr. Perotti. & Petr. Crinitus de honest. disc plin.

The *Egyptians* on this ground placed on the top of the Kings Scepter the bird *Cucupha* (which is a Stork) with a River-horse underneath it, implying that piety must suppress impiety, clemency ferity. And from hence the Tribunes of the Souldiers among the *Romans* carried their swords without edges, intimating that the Generals of Armies ought not to kill the Souldiers, but to correct them, as the Commander of the Bees doth her subjects; and perhaps on this ground, the *Egyptians* by the Hieroglyphick of a Bee signified a King, because it becomes a Commander of a people, to mingle with the sting of justice the honey of clemency.

Memorable to this purpose was the practise of a certain King of *France*, who having conquered the *Insubrians*, and entred

entred their City, by a ſymbole or type thus expreſt his clemency, wearing a coat full of Images or pictures of Bees, and this Motto written upon it, *Rex mucrone caret*, the King wants or uſeth not his ſting. Baptiſt Mantuan in exhort ad Inſub.

Their Ethicks and Economicks appear in many particulars. They make frugality the baſis of their ſubſiſtance, and therefore as they laboriouſly gather ſtore of honey they ſhut up the Cells ſtill as they fill them, and untill Winter come, will not open them, but live in the mean time of Bee-bread, and ſuch proviſion, as they get abroad, leſt if they ſhould prodigally waſte while they may work, they might after ſtarve when they cannot work. And in the pleaſures of this life they are ſo moderate, that perfect temperance ſeems to reſt onely in them.

They are neat and cleanly creatures, never ſuffering any filth or excrements long in the Hive, emptying themſelves alwayes abroad. And if in the Winter while they are weak, and not able to indure the colder aire, filth bee contracted, yet as ſoon as the Spring comes, and they grow numerous, and ſtrong, they diligently cleanſe their Hives, and carry out all.

Their cleanlineſs alſo thus appears, That they will not ſuffer their dead to continue long in the Hive, but carry them forth to burial.

Their chaſtity is admirable, for whereas many other creatures couple together openly; Waſpes alſo and Humble-bees, and many ſorts of wilde Bees ſcarce ſpecifically differing from them, yet whatſoever the Bees do in *Venus* ſervice they act in ſecret, and far remote from the eyes and knowledge of all men.

The Poets ſay, That this is the reaſon of it. *Saturn* the husband of *Ops*, and father of *Jupiter*, was wont to devoure his own children when they were brought forth (the reaſon of it was, becauſe *Saturn* was named the god of time, and all times paſſing and returning, revolve again into themſelves) which gave occaſion to this hiſtory; when *Jupiter* was born his mother *Ops* fearing the cruelty of her husband to him, concealed his birth, and the *Cretans* for fear that *Saturn* ſhould hear the childe cry, rung their brazen pans and kettles, which noiſe the Bees following, came to the place where the Infant was,

and fed him there with honey. *Jupiter* for so great a benefit, bestowed on his Nurses for a reward, this admirable gift, that they should have young ones, and continue their kinde without wasting themselves in Venery.

Mr. May Annotat on Virg. Georg.

Others report that *Jupiter* being much in love with a faire Nymph called *Melissa* turned her into a Bee, and for her sake bestowed this, and other priviledges on the Bees.

And they are not less valiant than chaste, though industry and diligence may do much with all other creatures, yet little with these, no not to palliate their fierceness, let them bee exasperated neer their Hives, you may as easily binde a Lion with a single hair, as by oppositon and resistance, compose and quiet them, though the creature is but little, yet *virtus non minima*. Is it not strange to behold such a little Insect to contend with the most mighty, to see such vigour in a creature without bones or scales, or hard defences, and yet to bee offensive to, nay prevalent over the most strong, and powerfull creatures!

Mr. Buller Femin. Monar. sap. 1.

In valour therefore, and magnanimity they surpass all creatures, there is nothing so huge and mighty that they fear to set upon, and when they have once begun, they are invincible; for nothing can make them yeeld but death; so great hearts do they carry in so little bodies.

In private wrongs and injuries done to their persons (for which cause men will sooneſt quarrel) they are very patient, but in defence of their Princess and Commonwealth, they do most readily enter the field.

Virg.

--- For them they hazzard death,
And think in War they nobly lose their breath.

Their War whatsoever some say to the contrary, is onely forreign, for though in the same Hive, by a violent or accidental congression of two swarmes, there bee sometimes a deadly contest, and bickering, yet still it is forreigne, for they were never united under one Commander.

Mouffet Theatrum Insect.

They never fight (whatsoever some unexperienced Observers report) for food, nor fall out among themselves for meat, but alike communicate of all they have (though but little) and when

when it is spent (if it bee no gathering season) starve altogether.

Their Geometry appears in the fabrick of their combes; and their Astronomy in the knowledge of the weather, for they fore-know and presage windes and storms, and either keep themselves in their Hives, or go not far, perhaps fetch water, and quickly return.

When they flye not far from the Hive, but flye about it, the weather being serene and fair, it is an usual token of an approaching storm, or tempest, *Aratus* prompted him (if not experience) with this observation. Theophrast. l. 1. de sig. tempestat.

But above all, one excellent skill they have, which the most experienced females, though they much desire it, must yeeld themselves to want; for they know certainly when they breed a male, and when a female, which appears by this, that they lay their Cephen-seeds in a wide comb by themselves, and the Nymph-seeds in the rest, which are of a smaller size.

In their own Commonwealth they are most just, not the least wrong or injury is offered among them: but I cannot commend their justice towards strangers, for all that they can catch is their own, unless they may bee excused in this respect, that the Bees of divers Hives are at deadly feud, or rather as Kingdomes that are at difference one with another.

If Bees, creatures without reason, have such Prudence, Providence, Fortitude, Chastity, Loyalty, Natural affection, such Government, Order, Discipline, How much rather ought men to express the same in their carriages and conversations. If they abhorre Intemperance, Lust, Sloath, Rebellion, Cowardise, shall men practise them? They are then worse than Brutes, and deserve rather to bear the names of savage Monsters, than of civil and reasonable men.

CHAP. VII.

Of their Senses.

CReatures produced of putrefaction are little, and weak in the senses; defective in their exteriors, much more in their interiors; yea they altogether want wisdome, and are stupid. And therefore Bees are prudent, because they are generated of a certain matter, and not without a parent.

Cardan. de subtil. l. 9. Plin. Nat. Hist. l. 11. c. 10. Arist. de Hist. animal. l. 4. Scalig. com. in Arist. de hist. an. l. 4. c. 7.

Bees have all the five senses, though there do not appear all those outward Organs of senting, which some other Animals have: And so likewise Fishes have no visible Organ of hearing and smelling; and yet hear and smell, there is not seen perfectly in their heads a brain, yet is it the beginning fountain and seat of all these senses, phantasie, and memory.

Of all the five senses their sight seems weakest, yet is it clear, especially afar off, which guides them abroad, and directs them home, though sometimes they are three or four miles from their Hives.

Mr. Butler Feminine Monarch.

But their sight is not so quick near hand; for sometimes they will flye against you, if you come suddenly cross them when they are laden; and also near the mouth of the Hive, if they light besides the door, they will run up and down seeking for it, as if they were in the dark (hereby verifying this truth, That things neerest the eye are furthest from sight) but then up they rise, and flying back a little way, turn again with a better view.

As many as fall besides the stool when it waxeth dark, ten to one but they lye abroad all night; yea if at such times being troubled by any thing, they come forth out of the Hive, although they bee fresh and lusty, they will leap up and down, run, and flye to and fro, untill they bee weary, but by no means can they finde the way in again.

And therefore it is, that when they flye abroad they take much pains at the door in rubbing, and wiping their horney eyes, that they may better discern their way forth, and back again.

It is said by some of the Ancients, that Insects have onely the sense of feeling, which is manifestly untrue, for if they go forth right to a place they must needs see.

Their smelling is quick and excellent, for they will sent honey a mile from their Hives, and make haste to it, and when they flye aloft in the aire by it, sent any flowry Mead or Heath near them.

As soon as the hony-dew is fallen, they presently sent it, although the Oaks that receive it bee afar off; which the Poet (speaking of the excellency of this creature in this sense) thus expresseth,

---- Idcoque per auras
Mellis apes quam longe ducantur odore. Lucret. l. 4.

Their feeling is as active as their other senses, nay more, for it is most individuate, it inheres in the subsistence of the creature, and cannot bee separated, or taken away without the detriment, or utter decay rather of the subject wherein it is. It may therefore bee called the living sense, although in divers diseases and occurrences also oft-time befalling the subject wherein it is, it may be deprived of it. As we read of *Athenagoras* of *Argos*, who never felt any pain when hee was stung by a Scorpion. Mr. Brathwayt Third Essay of Touching.

Their feeling is so quick, that if you do touch a Hive very softly, or knock upon the ground near the stool, they presently resent it, making a general murmure, and many of them coming out of the Hive door, as it were to examine the cause.

And for their taste, this is evidently as active as their other senses; thereby they make choice of waters, and all other gatherings for their use and purpose.

And lastly, for their hearing, that also is good, though *Aristotle* doubts of it, nay denies it. *Cardan* saith, That Bees, because they are so small creatures, cannot hear and see too; but being flying creatures, there is a necessity of seeing, and therefore an impossibility of hearing; but hee contradicts himself, when hee tells us, though untruly, that every morning (all being yet silent if not asleep) one (the Constable sure, or the Master of the Watch) by two or three Bombes or shrill sounds like a Trumpet, calls them all up to their work; and so like- Arist. de hist. an. l. 9. c. 40. Metaph. l. 1. c. 1. Card. de subtil. l. 9. Idem de varietat. rerum l. 7.

mentitious moysture, which as it passeth through a courser, or more fine, and delicate strainer, so are the colours brighter or darker. Others, Bees are ~~not~~ therefore brown or black, because their thin substance is easily dried, and that which is burnt and moist as a coal becomes black. Nor are Bees of one colour more than Wasps, because they feed of fewer sorts of food, than Wasps: For colours are disposed unto all things by the great Creator, of which no more certain reason can bee given, then why some men are Negroes, others are not.

Card de varietat rer. c. 28.

Arist. de gen. animal. l. 5. c. 6

Now Negroes are not black by reason of their feed, this is confuted by *Aristotle*; nor yet by the heat of the clymate, for this is confuted by experience, in that Countries as hot, produce of a different colour, who can certainly shew why about the *Magellanique Straits* they are so white? about the *Cape de Buon Speranza*, when as in the *East-Indian* Isle, *Zeilan*, and the Coast of *Malabar*, they are black both in the same parallel? Nor of the soyl as some have supposed, for neither haply will other races in that soyl prove black, nor that race in other soyles grow to bee better complexioned; but rather upon the curse of *Noah* upon *Cham*, or the posterity of *Chus*. But of this can wee bee no more assured of than the former; for *Chus* inhabited a part of *Mesopotamia* watred by *Gyon*, a river of Paradise, and one of the branches of *Euphrates*.

Seldens illustration Drayt. Polyalbion, 1. song.

Onesicritus apud Strabon, l. 15.

Sands Relat. lib. 2.

Some leaving the hot impressions in the aire, attribute it to the drines of the earth, as though the *Libyan* Desarts were not more dry (and yet the people no Negroes) than many parts of *Africa*, where they are all blacks.

Some ascend above the Moon to call some heavenly constellation and influence into this Consistory of nature, and there will I leave them; yea, I will send them further, to him that hath reserved many secrets of nature to himself, and hath willed us to content our selves with things revealed: As for secret things both in heaven and earth, they belong to the Lord our God, whose holy Name be blessed for ever, for that hee hath revealed to us things most necessary both for soul and body in the things of this life, and that which is to come.

CHAP.

CHAP. V.

Bees nature and properties.

BEES are neither absolutely wilde, nor altogether tame creatures, but of a middle nature between both. Some Bees are not (as some conceit) ignorant or negligent in gathering honey, and framing their combs, but yet serviceable in meaner imployments (as fetching water, watching, and warding) but all are naturally skilfull in all their proper labours, and interchangeably perform them. Their sting is more often the cause of their ruine, than instrumental for their relief; for loosing it (which they alwayes do when they sting) they unavoydably lose their lives; but with the fear of it they often chase away timorous persons from their Hives.

Some fancy that the cause of their humming noyse while they flye, is, least they should bee deprehended for theeves; whereas the robbing Bee, or theef, boldly discovers his purpose, as soon as hee comes near the hive which hee intends to assault, with a loud threatning noyse, proclaiming their destruction, if they shall resist, and not willingly permit their goods to bee plundered, endeavouring by fear to betray the courage that self-preservation should arm them with.

That some Bees stay at home to receive the labours of those that go to work (as *Aristotle* delivers) is but a fable; hee saith the Bees returning from their labour, shake themselves, and three or four attend and follow, and ease them of their burden. *Arist. in histor. Anim. l. 9. c. 40.*

That they carry in a windy season little stones to poise themselves, is a false relation; yet in a storm they will help themselves by flying under the Lee-side of an hedge, or encompassing a high and hilly place (if there bee any) and so as it were by making a board (as Sea-men speak) take the advantage of the wind. But if it bee a plain Champaign Country, where evasions avail nothing; then if the wind blow strong against them, they flye low, and almost close to the ground, and rest often.

Aristotle saith, The smaller Bees are more industrious than

may properly and perfectly bee moved from one place to a more remote, either by a progressive motion on the land, or flying through the aire, or swimming in the waters, for memory seems for this purpose to bee given to creatures, that they may bee removed to a distant place, either to avoid that which is nocive and prejudicial, or to finde that which is useful, which they have any wayes made trial of.

Further, some creatures, saith *Aristotle*, with memory, have prudence, which (as wee said before) is not to bee understood properly, but metaphorically, for they use not discourse, nor acquire a habit, whereby they may judge of what they are to do; but oftentimes so act by a natural instinct, and so provide for the future, as if they had reason indeed, and therefore by a figure are called prudent.

And this prudence of Brutes is a special sagacity in some, which by the instinct of nature, are so ordered as that they seem to imitate the reason and prudence of men; but all brutes have not this prudence, but those creatures that have it, are so perfect, that they have all of them memory.

And wee may adde further, that this natural sagacity, then chiefly merits the name of prudence when it is trained up, and perfected by the memory of former things.

Some creatures have not onely memory, but are also disciplinable, but others are not: Of this last ranke are those, which though they have memory, want the sense of hearing, for hearing is the sense of discipline; for wee see many creatures, dogs, and horses, act by external signes, but never without a co-operation of hearing, whereby they are called and stirred up to understand the signes.

Arist. Metaph. lib. 1. cap. 1. Now *Aristotle* sets down an example in Bees which hee supposed not to hear. But *Pliny*, *Scaliger*, and many others affirme the contrary, and by good arguments prove their Assertion.

Albertus willing to salve the Philosophers credit, invented this distinction. There is, saith hee, a hearing of a sound, as so, or of a voyce, as it is an articulate sound, now Bees hear in the former way, not in the latter; but this latter hearing, saith hee, is necessary to make a creature disciplinable; but whether many disciplinable creatures so hear, might bear a great question;

for.

for although when they hear such words or sounds, they come, or flye down, or speak after the fashion of men, yet are all these things done by a natural instinct (supposing memory, and the experience of such a sign, or voice.) And therefore *Suarez* saith well, It were better to say all creatures which are disciplinable, have hearing, and perhaps sight, memory, and a metaphorical prudence or sagacity. But to leave these nicer disputes, (as perhaps by some supposed) impertinent to our present Discourse. Fr. Suarez Metaph. disp. 2.

CHAP. VIII.

Of the Queen-Bee.

THe Queen-Bee is a faire and stately creature, longer by the half, and much bigger than a common Honey-Bee, yet not so big as a Drone, but somewhat longer. She differs from the Common-Bee both in shape and colour; her back is all over of a bright brown, her belly even from the top of her fangs, to the tip of her train, is clear, beautifull, and of a sad yellow, somewhat deeper than the richest gold: Her head is more round than the little Bees, by reason her fangs bee shorter, her tongue is not half so long as theirs; and thereby nature hath disabled her for working, for it is impossible for her short tongue to extract much out of any flower, were shee never so industrious.

Her wings are of the same size with an ordinary Bees, and therefore in respect of her long body, they seem very short, resembling rather a cloak than a gown, for they reach but to the middle of her train, or nether part. Shee hath streighter, and stronger legs and thighs than a Honey Bee, which are of the colour of their belly, but her two hind-legs more yellow. Shee hath a lofty pace and countenance expressing Majesty: That shee hath a white spot in her fore-head glistering like a Diadem, I never saw, though it bee frequently reported: Nay I am sure of the contrary.

Her nether part is much longer than her upper part, and more sharp than any ordinary Bees, having in it four ringles or par-

partitions, and in each ringle a golden bar in stead of those three whitish rings, which other Bees have at their three partitions. The spear or sting shee hath is but little, and not half so long as the other Bees, which like a Kings sword, is rather born for shew and authority, than any other use. I beleeve they cannot use their sting, for I have provoked and forced them to sting by hard holding of them, and putting their taile to my bare hand, but could never perceive them willing to put it forth. Nay when I have forced it out yet shee would not enter it in my hand.

In a word, the Queen Bee in her whole shape and colour, is a goodly and beautiful creature.

--- Velut inter ignes.
Luna minores.

As the Moon when in a clear night, shee fills her circle, is more and more eminently beautiful than all the lesser stars, so is the Queen Bee among the other Bees.

There are not two sorts of Kings, or Queens in any Hive, as *Aristotle*, and after him *Pliny*; and the most have delivered, but onely one, and though a King in place and power, yet is in sex a female, *Vocantur ab aliquibus matres quasi quæ pariant.*

Arist de hist. Animal. lib 5. cap. 19.

That two several Queens or divers companies should agree in the same Hive, though divided in their works, and neither intrench on the others subjects and labours, although the Ancients very confidently deliver it, yet it is a meer fable*. Many Kings in a Hive, but falsly: As *Aristotle* makes two kindes of Kings, or Queens, so in every Hive hee would have at once several Kings, for although one bee enough for government, yet not for generation, saith *Scaliger*, supposing with *Aristotle*, that they were instrumental, as the males, for the generation of Bees.

* Mr. Googe 4. Book in Treat. of Bees.

Arist. de hist. Animal. lib. 5. cap. 19. Scalig. Comment. in loc.

The Queens cells wherein shee breeds, are not usually in the bottome, or under the combs, but on the edges, some on the outside, some more inward in the middle of the combs.

And they often exceed *Aristotles* number, who determines the n

them to bee six or seven, whereas in some hives there are not so many, in others nine or ten. Arist. de hist. Anim. lib 5. cap 19.

It is a Chymerical fable that some have asserted, that the Bees first build their Commanders houses in the most eminent part of the combes, more large and beautiful than their own, and of the purest wax, and then inclose it with a waxen wall from the rest. Whereas indeed neither Commander, nor subjects have any particular habitations, for they live and lye between the combs, and the hexangle cells are repositaries for food, and nurseries for generation; and the orbicular cells are breeding places for the Royal issue.

And yet *Aldrovandus* delivers it as a received and ancient truth that the Queen Bees cells are made in a more eminent part of the hive, very large, invironed with a fence, or wall, for an emblem of their greatness. Andro. de Insect. l. 1.

And as in conditions they are of three sorts, so they make a triple division of their cells; those neerest to the Queens Pallace, for the most ancient inhabitants, as the Queens guard, and next to those the younger, and such as are not yet a year old; but to the middle sort as the most strong and lusty are committed the extremities. This is a fancy also.

The materials for the Queens generation are yellow, and there is not first a worm, but presently a Bee, *ut aiunt*, saith *Aristotle*. And *Higinius* as hee is cited by *Columella*, saith, the Commander is not procreated of a worm as other Bees, but in larger cells than the Honey-Bees, are found holes filled with a matter of a red colour, out of which the Queen Bees are bred, even at first with wings, so that it appears there was some glimmering light among the Ancients concerning the Queens generation, but dark and uncertain. Arist. de hist. Animal. l. 5. c. 22. Columel de re rust. l. 9.

Know thus much, that into those orbicular cells is injected a spermy matter thick like cream, but inclining to yellow, wherein and whereout the Queen Bee is bred, it being both matter of generation, and augmentation, for shee is at first (when shee is visibly any thing) a perfect Bee in lineaments and shape, though not in magnitude and dimensions, and feeds of that wherein shee is bred, until shee comes to her perfection.

The Bees never destroy the Nurseries, or breeding cells of the Queen Bee, as *Aristotle* delivers, and also *Pliny*, although after

they intend to swarm no more, they kill all the Royal issue then in being (nay although they bee imperfect embrioes) to prevent a future distraction.

Hesichius: Before the Bees swarm, the Queen Bee by a peculiar and distinct voyce (*Hesichius* calls it ζιγγον, which wee in English say *Sing*, for it is performed in a musical manner) some dayes before makes it known throughout all the Hive, that all may bee ready.

Ridiculous is the conceit of *Didimus* to pull off the extremities of the Queen Bees wings, that they may not flye away, for sometimes for recreation, and also for evacuation of their bodies, they use to go forth; and if their wings were cut would bee disabled to return.

I once had a good swarm likely to miscarry, the Queen Bees wings being accidentally torn, so that going out of the Hive, shee fell beside the stool, and could not get up again. And although once and again finding her before the Hive, I put her into it, yet afterwards shee went forth, and was lost. And almost all the Bees (in her loss) neglected their work, and began to pine away, untill I furnished them with a new Commander.

Ælian. lib. 5. cap. 12. The Queen Bee never voluntarily deserts her subjects, as *Ælian* and others intimate, affirming that the Bees diligently seek her out, and return her when shee hath fled away.

Oftentimes when a swarm goeth forth, the young Commander being weak, is not able to follow, but falls down, sometimes besides the stool, or sometimes further off, with whom some of the company will stay (such as being near her saw her fall) and encompassing her round will continue with her, except she bee taken up, and conveyed to the swarm or hive, untill they perish together. The Bees finde not their leader by the smell.

Palmexia de Bedæ axiomat. Philosoph. & Cantiprat. in bonum universale de apibus, lib. 1. c. 19. Many are confident that the Queen Bee never goeth out of the hive, but with a swarm. *Cantipratanus* asserts this, but forgetting himself in the twentieth Chapter, hee saith, If her subjects bee weary with working, and cannot, or wander, and know not the way home again; the Queen Bee goes forth and findes them by their smell, and relieves them, and conducts them to the hive; but this is more fabulous than the former.

It

It is more than probable, that the old Queen Bees, go forth sometimes with the latter swarm (whether out of curiosity, or wantonness, or indulgency, or dislike of her proper house, or love to her ancient subjects, I determine not) and this is the cause of the not thriving of many old stocks, after they have cast a second swarm; for although the Bees that are left, bee in a well repleniſhed Hive, and therefore live out the Summer well, and work too, though not with that order and diligence as formerly, yet will they rarely breed, but by degrees consume away, and come to nothing. I have exactly viewed divers such stocks that I have taken, and could never finde a Queen Bee among them.

If therefore you perceive a hive, after it hath cast twice, to have some quantity of Bees, and yet to work negligently, or not to increase in the Spring, suspect them to want a Queen, and supply them with one as soon as you can, if no other way, by driving a poor swarm into them, for which purpose alwayes reserve some.

It hath been a constant tradition, that the Queen Bee hath a special guard alwayes waiting on her, and that when shee goeth forth, she is alwayes attended with them. I have often seen her to go forth, but alwayes without attendance. It may possibly fall out that some Bees may go abroad with her, and some others return when she comes back to the hive, but never as her special guard.

Mr. *Butler* saith, If the Queen Bee by her voyce bids them go, they swarm; this is warily to bee understood, namely of the latter swarm only; for the first is for ought I could ever finde out, at the will of the Commons; but there may bee a tacite consent of the Queen, but not solemnly by voyce, allowing their departure as in after swarms.

And again this is not alwayes true in second swarms, for after the Queen hath approved of their going forth, yet they will sometimes refuse, and manifest their dislike by massacring all the Infants of the Royal family.

I have observed some few Bees in the Spring in every good Hive, with crests, tufts, or tassels on their heads, some yellow, some murrey, in manner of a plume, some standing upright, some turning down, but in all other respects like other Honey-Bees.

Mr.

Mr. *Butler* supposeth them subordinate governours and leaders, as Captains and Colonels: They are seldome seen but in May, and a little after; that they have any authority, or command over the rest, or special place about the Queen Bee, I believe not. This I am sure, I never saw any one of them attend her in her short progresses. Their working, I conceive wears off this ornament.

T. Cantiprat. bonum universale de apibus, lib. 1. cap. 14.

The Queen Bee goes first out with the swarm, say some: but it is not so, for she goeth almost last, sometimes indeed shee comes forth half an hour before the swarm riseth, with a great company which environ, and attend her on the stool; but her company moves not untill the greater part are passed out of the hive, and then those that environed her begin to arise, and shee with them.

Ælian lib 5. c. 12.

And as in the emission of a Colony, the Queen Bees go not before, neither are they carried at any time as some report.

Sometimes as I said, shee comes forth before, and stayes without; at other times shee comes first to the bottome of the stool, and perhaps out of the door, as it were chiding their slackness; but then when the swarm begins to arise, shee returns in untill the greater part bee come forth, when shee follows, and where they usually light, joynes her self to them.

Bees are governed by a Queen, which many hold not properly to come to the supremacy by succession, but by a judicious and prudent election, whereas it is most apparent, that the elder of the Blood-royal goes forth with the first swarm, and so the next in order with a second, although sometimes especially in castlings, or second swarms; some others venture forth. I have known eight go forth in one swarm, for they can but dye, going forth, and death is certain and inevitable if they stay. And a younger by dividing the swarm, or first getting the highest place of the Hive, may bee peaceably obeyed, with the destruction of all the rest.

Nay being necessitated, their own leader miscarrying in swarming, or by some accident afterwards. I have preserved the stock by putting to them a Queen Bee taken from another. And once, because I would bee sure, I pared off a little of one wing, and some months after, for experience sake, took the

Hive

Hive; where I found that Commander put in by mee, and no other Leader. So that though ordinarily the Queen Bee comes to her government by birth-right and seniority, yet sometimes by election, as in the miscarriages of their old Queen, and in second swarms when two are united together.

When several Leaders go forth, one whose party prevails gets the Throne, and all the other competitors are slain. When their proper leader by some mis-hap hath been lost, I have given them another (as I said before) with whom they have well agreed, and prospered, so also in the union of swarms.

And although they are willingly subject to a leader, yet do they not altogether lose their liberty; for the first swarm goes alwayes forth at the will of the commons; and although the second, and also the third, must have the Regal assent which usually (being indulgent to their issue) upon petition they grant; yet if the Commons see it not convenient to diminish their numbers, upon the Queens grant, they kill the Probationer, and all of the Blood-royal; so that Prerogative avails little in the Commonwealth of Bees.

The Queen Bee (for it is an Amazonian Commonwealth) transcends in greatness and beauty of body; but which is most praise-worthy in a Commander, in mildness and gentleness, therefore though they have stings they never use them, which the breeding or mother Wasp doth, stinging more venomously than the smaller.

The Laws whereby this Commonwealth is ordered, are natural, not written in letters, but engraven in their manners; and so studious are they of peace, that neither willingly, nor unwillingly do they offer injury to any of their subjects.

Who will not hate the *Dionisii* of *Sicilia*, or the *Ottoman* family among the *Turks*, or the present great *Mogors*, or *Persian* Tyrants? who (in practise) hold Monarchy to bee nothing else but a lawless exorbitancy in all manner of lusts and mischiefs, which ought to bee far from a good Prince, left while hee seems to bee a man, hee discovers himself to bee far worse than these irrational Insects.

And as their life is not vulgar, so neither their birth and original; for whereas all domestick Bees, at first are imperfect creatures, worms fixed to their Cells, wanting many senses for

twenty dayes together, and then that they may live a more perfect life after a death of twenty dayes, more transmuting their shape, come forth winged creatures; The Queen Bee is bred (as I formerly hinted) in another fashion.

There bee in every Hive ordinarily on the outsides of the combs (yet sometimes in the middle) but not near the verger, little concave cells (but one in a place) almost like acorn cups, but nothing near so broad, yet somewhat deeper, very strong and thick of wax, orbicular, wherein the Queen Bee injects a spermatical substance thick like cream, but somewhat more yellow, wherein the Queen Bee is bred perfect at first in all the parts, and lying almost round in it, feeds of it, and so grows as the chicken in the shell, first of the white, and then of the yolk (while the Hen sits upon it) untill it bee disclosed.

The *Athenians* banished *Pisistratus* from their City; and the *Syracusians Dionisius* from his Royalty; and many other people several Tyrants for their want of humanity and moderation: But in the Bees Commonwealth, never any Commander gave occasion of dislike to the Commons. Shee orders others what to do for the publick good, or rather nature directs them; shee is provided for, and maintained by their labour, and they directed, protected, and preserved by her society.

How the Queen Bee governs, I will not (as many conjecture) cannot certainly determine; each Bee readily fulfills, and follows her proper task, and all in all, aim at the publick welfare; none, how old soever, desiring a Writ of Ease, but all labour untill their labours kill them.

The Queen Bee lives not retired (constantly) in any part, but as occasion serves, is sometimes in one part of the Hive, sometimes in another, but works not, nature denying her fitting organs.

And because some have observed large orbicular cells on the edges (for the most part) of the combs, they have therefore supposed them to bee their pallaces, but they are scarce capable of half their grown bodies, and are onely seminaries for generation, not places or pallaces for habitation.

CHAP.

CHAP. IX.

Of the Drone.

THe Drone is a great Bee without a sting, the Vulgar opinion is, that hee is made of a Honey Bee that hath lost her sting; but no man ever saw that a Bee became a Drone.

Others seeing the fondness of this opinion, have thought that the Drone is a different species, and that as Bees breed Bees, so Drones breed Drones, which conceit, if the Author had observed, that at the time of their breeding, and many months before, there is not a Drone left alive to breed them, hee would have liked as well as the former. J. Stobæus de potentibus ser. 45.

Aristotle saith, That they onely are bred of the Bees, but the truth is, they are of the same species with the Honey Bee, but of a different sex.

Many reasons are laid down by Mr. *Butler* to prove the Drone to bee the male. Mr. Butler Feminine Monarch. c. 4.

First, because though they bee great Masters of the Honey, yet untill the Bees begin to leave breeding, and have conceived for the next year (which some do in *July*, most before *August* is expired) they suffer them, afterwards they begin to beat them away, which if some stalls do not, they dye naturally before *October*; and from thenceforth all the Winter untill the Bees breed again, there is not a Drone to bee found in *rerum natura*: When they are quite gone, then do the Bees lay no more seeds that year, but onely hatch and breed up those that are in the cells.

Secondly, because as the rather, and the more the Drones are, the greater and the earlier are the swarms: So where the Drones are few and late, there is small increase. And therefore if you kill the Drones of a Hive before they have done swarming and breeding (as some fondly have done before Midsummer, to save their honey) neither will the swarms come forth that were formerly bred, nor the stock thenceforth breed any more. After which time bringing in Bee-bread as much as before, and having no young ones to spend part, they lay it up carelessly in their cells, where it corrupteth and turneth to stinking,

ſtopping, which will cauſe them ſo much to miſlike their Hive, that in Autumn they will yeeld to the robbers. And if by your care and watchfulneſs they bee then preſerved, in *February* following, when the breeding time begins, finding their wombs barren, and therefore loathing themſelves, they yeeld their goods to them that will take it, and after a while by converſing with the ſtrange Bees, like of their company, and go away with them to their Drone. But every fair day they will with them return to fetch that they left behinde.

Thirdly, becauſe every living thing doth breed male and female of his kinde, and experience doth teach us, that the Bees do yearly breed as well Drones as honey Bees; and ſeeing the honey Bees are females, it followeth neceſſarily, that the Drones are the males of the ſame kinde: And therefore the Drone in the learned languages hath his maſculine appellation, as the honey Bee her feminine.

Fourthly, wee ſee the like in the likeſt Inſects, the Waſps, Hornets, and Humble-Bees, of which in their proper places.

Fifthly, I adde the Drones are males, and the honey Bees females, becauſe of the ſmalneſs of their voyce, which is alwayes ſmaller, and ſhriller in females than males, except Cows which bellow lowder than Bulls.

Ariſt. de hiſt. Anim. lib. 4. cap. 11.

When the old Bees have ended their firſt brood of females, then laſt of all after the ſame manner, firſt in the Drone combe, which is one, and but one in every Hive, and almoſt the backwardeſt, made with deeper and wider cells for the nonce, they breed the male Bees, or Drones, as was long ſince obſerved.

Plin. Nat hiſt. l. 11. cap. 11.

In the latter part of the year they breed ſome promiſcuouſly with the Nymphs, but then they elevate their covers.

That not many are bred before Mid-May, not any before Mid-April (except a few by chance which are not ſuffered to live) as Mr. *Butler* aſſerts, is not ſo; for there are ſome in all ſwarms, and ſome ſtocks (with us) ſwarm by Mid-April, therefore muſt the breeding of many of the Drones bee then finiſhed.

And after a Hive hath ſwarmed, though before you ſaw not one

one ſtir, yet then ſhall you take notice of their flying abroad every day about noon. But when the Hives are full, and yet ſwarm not ſo early as their fellows, they will then (but not often untill Mid-May) flye forth, and play a while, and then return into the Hive to fill their bellies.

But to put all out of doubt, that the Drones are males, I adde that the Drone in diſſection hath two large teſticles, greater, proportionably to his body than any other creature.

They are joyned together upward, but hang down towards the tail in two viſible parts, of a whitiſh watry colour towards the ends, their ends or points are of the bigneſs of a ſmall pins head, milk-white; the teſticles are half as long as the nether part of the Drones body.

In the belly is a white entral longer when it is extended then the whole body. They have lungs (if my eyes deceive mee not) of a reddiſh colour, divided as it were in the middle. The outward part of the back and breaſt is of a griſly ſubſtance, under which is a kinde of fleſh, all of a reddiſh colour, where is the heart, and other neceſſary parts, although (without a magnifying glaſs, by an expert Anatomiſt) not exactly to bee diſtinguiſhed.

The eye hath a watry ſubſtance, and there is a viſible brain in the head, of a reddiſh colour.

In the tail (which I had almoſt forgot, though often made trial of it) upon a little preſſing, a ſaffron-coloured Ox-head, with ſtretched out horns, and a crooked ſnout will diſcover it ſelf, which one (cited by *Aldrovandus*) preſſing a Drone to experiment whether it had a ſting, reports as a ſtrange, and never before heard of relation (I often ſaw it before I read him, or any other.) And hee concludes that nature in this portent doth ſhew the ſeminal reaſon of them, and how being loſt they may bee recovered; which how to effect, *Virgil* and others have at large diſcourſed. This is ſuppoſed to bee the inſtrument of generation.

Bernard in Gomeſiu. Miedis, lib. 1. de Sale.

Mr Remnant diſcourſe of Bees, l. 1. c. 2. Ariſt. de gener. lib. 4. cap. 4.

The teſticles are in the upper part of the belly, and ſo likewiſe the males among birds have the teſticles drawn inwards.

L. Verul. Silva Sil. cent. 9. 852.

The difference between male and female, in ſome creatures is not to bee diſcerned, otherwiſe than in the parts of generation,

likewise in the evening, flying about the Hive, with a small humming murmure commands them to sleep.

But if Bees hear not, to what purpose is the calling before they swarm, and also their encouragements in fight,---

Virgil. *--- And then a voyce*
Is heard resembling Trumpets winding noise.

Scalig. Comment. in Arist. de Hist. animal. l. 9. c. 64. And *Scaliger* acknowledgeth against *Aristotle*, that they hear *signa enim dant intus, alia atque alia etiam foris, mutato murmure.*

But in a word, further to manifest that they hear: If a swarm rise, and the Queen Bee miscarry, and fall by the way (as it oft happens) her company notwithstanding will light, expecting her coming. But being hived, they presently miss her; and with a mournful murmure bewail their condition. Some run up and down distractedly within the Hive, others without; and by and by making a sudden stop, fall into a passion of mourning, and then run up and down again, and then mourn again, but in the mean time they send many to seek for her. I have often found her where shee hath been fallen, and taking her up, carried her to the Hive, where I have observed (not without admiration) how that at her first coming they have in a moment changed their former note and carriage, and with clapping of their wings, and a rejoycing murmure congratulated her presence; and those that were seeking about for her, although some rods distant from the Hive, in an instant, as it were, returned all home, and with a rejoycing gratulation welcomed their Queen. And therefore they have hearing, which shews likewise, that though their spirits bee diffused, yet is there a seat of their senses in their head.

L. Verulam. Silva. silvar. cent. 7. 698.

And as they have the outward senses, so have they the inward also, else could they not bee wise and prudent; understand wisdome or prudence equivocal, so called by reason of the resemblance it hath with true wisdome or prudence, being able to finde out, and to manage convenient means unto natural and self-ends.

F. Picolomin. universa phil. de moribus.

Vertue is not taken or understood one, but many wayes, sometimes for the shadow, and a slight or light resemblance thereof, in which signification Bees are called prudent, whereas prudence properly so called, belongs not to them.

Bees

Bees have memory, which is not a sense or imagination, or understanding, but a disposition or habit of any one of them, when the time also is joyned, or added to it, wherein the impression is made, and the vision is left in the minde; whence this is a consequence, those creatures have memory, which have sense and understanding of time, for wee remember onely in the sensual part of the minde; for if a horse hath been mired in a slough, when hee meets with the place again, hee will presently remember that hee was there mired. Cælius Rhod. Lect Antiq. lib. 20. cap. 3.

And herein Brutes differ from men, That a reasonable creature doth not onely remember that hee hath seen, or heard, but also differenceth the spaces of the present time, from the time past; but Brutes onely know thus much, that they have fallen (into a pit, or other dangerous place) at this present, or sometimes formerly.

Again, a man observes that hee remembers, which irrational creatures do not. And among all living creatures they have the best memory, which have the most clear, pure, and perfect imagination, of which sort are Bees and Pidgeons.

As some creatures besides sense, have memory, and natural prudence, so some go further, for they are disciplinable; but none have experience, or very little.

Now by sense wee are to understand that sensitive knowledge which is onely in the presence of the object, whether it bee by the internal senses, or by the outward common sense or phantasie: For under the name of sense, the Philosopher comprehends whatsoever is necessary to perceive or understand in the presence of the object, but there is necessary in all somewhat of the phantasie or imagination, to understand even that which is without. And therefore it is common to all brutes, as to understand, so also to have imagination; but memory addes an inward strength, and power of conserving the species and using them in the absence of the objects, that by this means any thing may remember those things which it takes in the sense, even then when they are not present, in regard of the externall senses.

This faculty, saith *Aristotle*, some creatures have, but not all, but yet hee declares not what creatures have, or what want it. They are commonly thought to have memory, which

some sooner, in some later; and these *Amazonian* Dames having conceived for the next year, begin to wax weary of their mates, and to like their room better than their company. It seems incredible to some, that the honey Bees should receive a prolifical vertue from the Drones, which they should exercise eighth months after, and yet they consider not, that if a Hen be trodden a day or two, some affirm the eggs will be prolifical the year following. And Dr. *Harvey* attests the same; but yet upon the experience onely of twenty dayes, it is confessed, that it is sufficient for that latter; and *Aristotle* saith, That generous Hens will lay sixty eggs, before they sit, others more; so that they will bee sometimes prolifical two or three months, but afterwards they must bee trodden again, or the eggs will bee addle. But to leave this untill wee treat of Wasps, when wee shall have a more fit occasion to handle it.

Hier. Fabricius ab aqua pendente de formatione ovi & pulli.

The Bees having conceived, begin to neglect, nay to molest their Mates: At first not quite forgetting their old familiarity, they gently give them Tom Drums entertainment; they that will not take that for a warning, but presume to force in again among them, are more shrewdly handled. You may sometimes see a handful or two before a hive, which they had killed within, but the greatest part flyeth away, and dyeth abroad.

They are but short lived creatures did they live their utmost date; for eating much, and being idle, onely in the heat of the day, with a great humming sound, they flye forth, and fetching a short compass or two, having emptied themselves, and whetted their stomachs, they return to feed, and that alwayes of the purest honey, whereby they may become so foggy, that oft times before the Bees meddle with them, you may see hundreds in a day crawl rather than flye out of the Hive, but not able to recover the stool again miscarry abroad.

And whereas poor stocks (I mean such as have few Bees, though otherwise well provided) despairing of their own continuance, let the Drones alone, nor disturbing, much less killing of them, yet not one will out-live *October*.

Bedæ axiom.

Some may ask, Is not the male more worthy than the female? How is it then, that the Drones are but vassals to the honey Bees? which as they excell the Drones in vertue and good-

goodnes, so in power and authority, ruling, and over-ruling them at their pleasures. Albeit generally among all creatures, the males as most worthy, do master the females.

And this *Sesostratus* King of *Egypt*, who conquered a great part of the world did thus express according to *Herodotus*. If hee overcame any people without contention, or battel, hee made them bear the badge of a woman engraven in their weapons, but if they did fight it out couragiously, the cognizance of a man. Yet in these, and a few others, the females have the preheminence: And by the Grammarians leave, the Feminine gender is here more worthy than the Masculine. So in all the kindes of Hawks, the female doth command the male, as being the stronger, and the better armed. And the female of the Bear, and the Panthar are more bold and couragious, stronger, and of greater spirits.

Cœlii Calcag. If Commentitie verborum & rerum significat.

Arist de hist. l. 9 c. 1.

The female Ounce likewise, though less than the male, yet is more cruel.

Jo. Caii hist. rarior Animal. Wecker. de secret. l. 8.

Ridiculous is the conceit of *Democritus* to catch the Drones. Wet, saith hee, the covers of the Hive with water, and in the morning you shall finde the Drones busie sucking thereof, for feeding of the best honey, they are alwayes thirsty; Nay because they feed of the best honey, and not *Sandaracha* which is hotter, they are not thirsty; for the Bees all Winter long, while they live, thereof drink not at all.

Timely ridding of the Drones by the Bees, is a good signe that they are like to bee forward the next year; because the stocks that have cast often, do bear long with their Drones, although there bee twice so many as bee needful for the Bees, that are left, therefore (to save the honey which these would devour) it is not amiss to prevent them; and about a fortnight after their last swarm to diminish their numbers, which you may do safely in the heat of the day, killing them with your fingers: And the bruising of them with your fingers before the Hives mouth, will sometimes cause the females to take the worke out of your hand, and fall upon them themselves.

Some use Drone-pots made of Oziers, the twigs being set so close, that the Drones, although they go forth, yet cannot easily return in again. But the catching this way doth much

trouble, the Bees may sometimes keep out the Queen. And therefore I like not of them.

CHAP. X.

Of the Generation of Bees.

IT hath been an ancient tradition, that Bees have a twofold production, as many other creatures, by generation and putrefaction. About this latter way, *Virgil*, *Cardan*. *Aldrovandus*, and many others have been copious; but whether there bee any solidity in this particular, I am somewhat dubious, because it was never authentically proved to bee performed by any. But they tell us that the best sort is procreated of a corrupted Lion; And therefore say it is no wonder, that being so small creatures they fear not any, nay prevail over the greatest, with a Lion-like courage assaulting them.

Suidæ Historica. A second sort is bred of a Bull, and therefore they are called the daughters of Bulls, because they are bred of their carkasses.

A third sort of a Cow.

A fourth sort of a Calf, but tell us not wherein these kindes differ, for they forgot waking what they dreamed of sleeping.

Would I spend words to no purpose, I might easily for the general, evince the invalidity of this opinion, for in *Brasile*, *Peru*, and most of the new world where are many sorts of Bees, and some in colour and magnitude not differing from ours, there were no such creatures, whereof (if they were lost) they might bee again recovered, before they were transported by the Spaniards.

Muffet Theatrum Insector. But more absurd is that opinion of others, that of the ashes of Bees bedewed with sweet wine, and exposed to the Sun in a warm place, there will bee a present resurrection of the former burnt Bees.

Dr. Harvey de generat. Animal. exercitat. 13. Perplexed and various are the opinions of the Learned, concerning the generation of Bees.

The first workings of nature are as dark as midnight, and with

with their subtlety do not less be-fool, and deceive the strongest understanding than the bodily eye.

Some not comprehending their conception and generation, have fondly delivered that they carried the spermatical matter of their original into their hives, gathered out of flowers, and after hatch them, either from the white honey suckle, or the reed (or Calamus) or from the Olive because, in yeers abounding with Olives, there are plenty of swarms. Not considering that the first brood is hatched before any of these flowers bl ssome, and that some of these flowers are not at all in the Northern Regions where is the greatest plenty of Bees. Arist. de hist. l. 5. c. 19.

And for the Olive, *Pliny* denies that they taste of it, and therefore saith, it is better away; and yet hee was sometime of a contrary opinion. Plin. Nat. hist. lib. 21. c. 12. idem. lib. 11. cap. 9.

Cardan denies that they lay eggs, but are bred of honey. This *Scaliger* well opposeth, because, saith hee, There can bee no generation of honey, for then it should bee the seed of the Bee; but this is false, neither of honey corrupted, for it corrupts not, but preserves from putrefaction. Card. de subtil. l. 11. Scalig de subtil. 191 exer.

Scaliger questioning whether Bees did copulate or not, saith that of the dew in leaves of plants, worms are produced, and therefore dew opportunely gathered, and fomented with a genital heat of the Bee may be animated into a worm. But the first, and chiefest breeding of Bees is in the end of *February*, when they scarce stir forth at all, or not untill the dew be exhaled. And howsoever untill *May*; dews are known to have little efficacy, or excellency, besides you may visibly see the eggs when they are first injected into the cells, they are eggs, and not a dew.

Scaliger, though hee propounded the former opinion, yet held not to it; for whereas *Aristotle* delivers it as an opinion of some that the Bees bred by copulation, and that the Drones were males, and the honey Bees females; this saith hee is false (although without reason or experience) for the Bees indeed are females, but the Kings are the males: And *Muffet* also acknowledgeth no males but the Kings. Scalig Comment in Arist. de hist. Anim. l. 5 c. 19.

I beleeve, saith *Muffet*, they propagate by copulation, and the greater are males (namely in his sense the Queens) and the less females, but whether they tread as Cocks hee professeth that he knew not. Muffet in Theatr. Insect. l. 1. c. 8.

Michael Toxites in Onomastico super Theophraſt.

Toxites ſuppoſeth that Bees copulate, and that the Bees are the Males, and the Kings Females: And that the Kings do at certain ſeaſons caſt forth worms in multitudes as flies, their flye-blotes, and that the Drones ſit upon them, and hatch them after the manner of Serpents.

Mr Remnant hiſt. of Bees.

Another ſaith, the matter in which they blow or breed, is ſomething that they gather of the flowers or plants, and bring home, and put into the holes, or cells of the combes, which they mix finely with a little water, and then blow in it a thing leſs then, or as little as a flye-blote. But this cannot bee, for wee finde nothing in the cells wherein the ſeed is injected, but the ſeed it ſelf. And again, the Bees ſeed is much bigger than a flye-blote.

Ariſt de gene. lib. 3 cap. 10.

And as to others, ſo to *Ariſtotle*, the generation of Bees ſeemed very ambiguous and doubtful; for whereas among fiſhes ſome generate without copulation, he ſometimes ſuppoſed the ſame of Bees, and argues thus: They muſt either fetch their young elſe-where, as ſome in his age opinionated, which young muſt be either bred of themſelves, or be produced by ſome other living creature, or they muſt generate them, or partly fetch them, and partly generate them: For ſo ſome ſuppoſed that they fetched onely the Drones, or elſe they muſt generate them by copulation, or without copulation. Thus Bees by copulation among themſelves to breed Bees, Drones to breed Drones, and the Queens to breed Queens. Or all the reſt from one kinde, either from the Queens, the Drones, or the Bees; for ſome, he confeſſeth in his time, held that the Drones were males, and the Bees females: Others held a contrary opinion, that the Bees were males, and the Drones were females.

But againſt all theſe tenets, *Ariſtotle* reaſons as impoſſibilities. If, ſaith he, they breed not, but fetch their young elſe-where, of neceſſity it muſt bee, that there be Bees without any labour of Bees, namely in that place from whence they fetch their ſeed; for why do they come to perfection, being carried away, and not in their own proper places.

And again he ſaith, It agrees not with reaſon that the Bees are females, and the Drones males, becauſe nature never gives females weapons to defend themſelves withall.

Now

Now the Drones are weaponless being without stings. And on the contrary, it is not reasonable to imagine that the Bees are males, and the Drones females; for no males are diligent and laborious in educating of their young. Cock-pidgeons, and most males among birds, sit part of the day, as well as the female, and as diligently feed their young. Some say the Partridge makes two nests, and the Hen sits upon one, and the Cock upon another, but they are mistaken. The males also of beasts of rapine seek out, and provide for their young. D. Har. exercitat. 8.

And that some Bees should be males, some females, is altogether likewise improbable, for in all creatures the male differs from the female, externally many fowls differ not, as Crows, Rooks, and many small birds.

And that by generation they should procreate, is as unlikely, because no man ever saw it.

At last he determines that the Bees are females, but as plants have both sexes, because the sex is not to be distinguished. But if the Drones are bred without copulation, then also keeping the same order, the Bees, and their Commanders, are bred without copulation.

He concludes after a long uncertain discussion of this doubt, That the Kings or Queens Bees breed themselves, and the Bees. It is necessary also that the Commanders be procreated by some, but neither of the Bees, nor of the Drones, therefore of themselves.

Now the Commanders cels being last made, and but few in number, they breed therefore their own kinde (few according to the cels) and also the *Bees*. And the Bees breed the Drones, and they breed nothing; and so the Generation determines in the third number, *Non tamen satis adhuc explorata quæ eveniant habemus*; so that in all this we have it confest; there is much to little purpose: The Drones, whatsoever some say to the contrary, is the Male-Bee, and although he be not seen to engender with the Hony-Bee, either abroad as other Insects do, or in the Hive, which (whatsoever some have projected) is unpossible, yet without doubt is hee the Male-Bee, by whose natural heat, and masculine vertue, the Hony-Bee which breeds, both Hony-Bees and Drones conceiveth; that they are Males, we have sufficiently proved in the former Chapter.

In the next place the main Query is, how the Bees receive a prolifical power from them.

Albertus Magnus. lib. 26. *Albertus* denies by copulation; but granting the Drones to be Males (which is undeniable) and the Hony-Bees Females.

Arist. de Hist. animal. lib. 5. c. 2 *Aristotle* concludes for it, he saith, *coeunt ea in quibus mas et femina est*, Those creatures conceive by copulation where there be Males and Females. And again; they that are bred of the same sort, or kinde, if there be among them Male and Female, *e coitu generantur*, are bred by copulation: And this is asserted by others.

Idem de Hist animal. lib. 5. c. 1. Geor. Piscatorius. That they engender not together, *Aristotles* Argument is, because there be but few young in their eels; but other Insects that are procreated by copulation ingender long, and hatch quickly: This Reason is frivolous, nay false, for the Bees are numerous in their young (that I say not almost innumerable) and they hatch quickly, sooner than the Wasp. And yet that Wasps are bred by Generation (being *cognatorum generatio*) and not Bees: He attributes it to a defect of Natures bounty towards them, because *nihil ut apum, habent genus divinitatis*.

Arist. de Genera. lib. 3. c. 10

So that according to the Philosophers axiome, and the weakness of his reason to the contrary, they do engender together; but because this is not visible, and therefore perhaps may be denyed by some cavilling Sceptick. I will further shew that the Hony-Bee may have a Masculine vertue from the Drone, otherwise than by copulation. For in the Eele, and the Purple, (a Shel-fish whereof Purple comes) is no Sex visible, yet by their slaver, not by copulation do they produce their young, and perpetuate their kinde.

And many other sorts of fishes do not by copulation become fruitful, and generate their kinde; but when they have brought forth, or laid their Eggs, the Male bedews, or sprinkles them with a seminal moisture, whereby they are not addle but prolifical.

Arist. de Hist. animal. l. 6. c 14

Dr. Harvey de generat. animal. exercitat. 40 I have seen, saith Dr. *Harvey*, the Male-Fishes to follow the Females in shoals in breeding-time, that they might sprinkle their new laid Eggs with their Milt or seed. Thus the Sepia or Cuttle-fish.

There is a Fish called Glanis, in the River *Glanis* in *Hetruria*:

ria: The Female whereof by rubbing her belly on the Males belly is fruitful; and ſo the Scate and all Fiſhes with a full tail with the rubbing of their bellies together engender: And ſo in a word do all fiſhes, beſides broad griſtly fiſhes. Arist. de Hist. lib. 6. c. 13

All Fiſhes that bring forth Eggs, their copulation is ſcarcely viſible, but without a Male they conceive not, nor any other Creature where there are Males. Vultures ſaith *Ambroſe* conceive without a Male, and generate without conjunction; but *Aldrovandus* on good grounds denies this; and alſo *Albertus*, who ſaith, they are often ſeen to tread. Ambroſe hexam l. 5. c. 20. Ulyſ. Aldro. Ornithолog. l. 3

When the Bees have conceived, they deliver their ſeed, not by their tail, but by their mouth, *ſetum edunt ore edito ut aiunt quidam*; and this was the cauſe that ſome thought that they fetcht it elſewhere from ſome flowers: *Ariſtotle* therefore ſpeaking of it, ſpeaks doubtfully ὡς λεγουσιν, for it is a very obſcure thing. Arist. de Hist. animal. l. 5. c. 19

And that they blow their ſeed, our Vulgar expreſſion intimates, for their young is called ſpar, that which the Bees ſpit forth, or deliver by their mouthes.

If wee affirm the ſeed of the Bee to be blown, it cannot ſo properly be called an Egge, *Ariſtotle* ſaith *Aquapendens* was very careful not to call the ſeed of Inſects Eggs, but Worms, yet Dr. *Harvey* cites him, as if he ſometimes or promiſcuouſly, called the Worms, Eggs; It is true, hee called the ſeed of a kinde of Graſhopper Eggs, but it was before they were quickned but when they are hatcht, hee calls them no longer Eggs, but worms: Although indeed they may ſeem when they have done feeding, and are incloſed in their caſes to be analogous eggs, but not while they feed; and therefore *Ariſtotle* ſaith, Every kinde of worm when it hath attained his full end, and perfect magnitude, is as it were an egge, for the ſhell hardens, and for a time it ſtirs not, which, ſaith he, is apparent in the worms of Bees, Waſps, and Caterpillars. Aquapen. de formatione ovi & Pulli. p. 19 Arist. de Hist. lib. 5. c. 29, 30 Dr. Har. de generat. animal. exercitat. 61 Arist. de gener. lib. 3. cap. 9.

But the Philoſopher enumerated too faſt: Of Caterpillars it is true, and of all others that have proper, or natural caſes, but ſuch as have adventitious, as Bees, and Waſpes, never harden.

An egg properly is that, out of a part whereof a living creature is produced, and the reſidue is meat for it, improperly that

Aqua pend. that is an egg out of the whole whereof, a living creature is bred, as the eggs of Spiders, Ants, Flies.

Arist. de gen. lib. 2. c. 1. Insects first breed a worm (although it be not yet a worm untill it be hatched, but indeed rather an egg) and this after a space of time is a kind of egg, for the Aurelia hath the faculty of an egg, and a living creature is bred of it, receiving in the third nutrition, the end of generation.

Mr. Butler, Mr. Levit, Mr. Remnant. That the Bees blow as a Flye or Wasp, is affirmed by some. And as the blotes of the flyes are nourished by the flesh wherein they are blown, and by the earth wherein they are bred, so the spat or brood of the Bees, saith Mr. *Levit*, are nourished by honey and water; but of this in his place.

The Bees seed is white, about the bigness of a Butterflies, not round, but oblong, which they lay close under the honey-combes. In the middle of the bottome of the void cells

Mr. Butler round like a ring, saith Mr. *Butler*, but although he was a great observer, yet for want of observing himself, and following, as

T. Gaza he supposed *Aristotle*, he was mistaken in *Theod. Gazas* translation, who renders the word, πλάγιον by *obliquus*, which *Scaliger* well reads *ad latus*.

The Bees seed first sticks to the side of the cell, saith

Arist. de hist. Animal. l. 5. c. 19. *Aristotle, ad latus jacet*, alwayes (as I remember) at an angle, some distance from the bottome, and so doth the Wasp lay her seed, and not close to the bottome; thus it sticks with one end, and with the other end bends slope-wise towards the middle of the cell.

And after it is hatched, it lyes a while cross, or side-wayes, with the mouth somewhat erected, and grows so long as the matter of augmentation continues, which is not long, and then it falls to the bottome, and raiseth it self up that it may be fed. It will raise it self up, and sink as it were within it self by contraction when it pleaseth; for though it have not feet, yet the skin is somewhat scabrous whereby it rouls, or moves it self higher, or lower within the cell.

The Bees in their breeding discend by degrees towards the nether part of the combs, filling one cell after another: But when their chief breeding is past, they do not precisely observe this order, but lay up their food promiscuously among the young Bees, where they find the cells empty.

First,

First, The seed sticks to an angle above the bottome, when it is hatched, it falls after a little space to the bottome, but cannot come forth to take food, which yet *Aristotle* seems to grant to be necessary: First, he saith, It is nourished, but tells not how: Secondly, he saith, over against the cells, where the young are bred, the hony is laid up, he tells us not wherefore.

But *Scaliger* saith, That the young may eat thereof, *ut Accumbenti cibus opponatur*, supposing, as he professeth, a few words before that, the worms and hony were both together in one cell, for he rationally concluded, they could not live and grow without food, they were not *locomotive*, and therefore could not go forth of their cells for it. How therefore they should receive it, was the great mystery: He supposeth the worms to stick fast on one side of the cell, and the hony on the other, that with bowing of their bodies, they might feed themselves. The worm, saith he, sticks so fast to the side, as if she were glewed or rivited there, but by no means at the bottome, lest she should be drowned with the hony. And this supposition of the worm and the hony being together in the same cell, made him conceive the worm smaller than the Bee; for saith he of the seed is generated a worm, which worm is alwayes less than the Bee; but this is not so, for the grown worm is every way as great, and as large as the Bee. Scalig. Comment. in Arist. de hist. l. 5. c. 19

But neither of the former opinions are true ordinarily, for the Bees are bred usually in the combs before, or in the lower part of the other combs, the hony (if there be any) being reposited in the backward combs, and the upper parts of the other. It is true indeed, that the Bee-bread is oft laid up in the void cells, among the breeding cells; not that the young may feed themselves, but that therewith being ready, and near at hand they may be fed by the Bees.

The seed is never visible in Bee or Wasp, that I could discern upon dissections of many in one part or other.

Cardan affirms that they cannot have eggs within them, and be exercised in their continual labours, because neither Silk-worm, nor Grashopper as long as they flye, have [illegible] suppose the assertion true, that they have not eggs within them (but blow their seed which I beleeve) yet is this instance and Cardan. de subtil. l. 11.

reason very weak. *Scaliger* answering him, justly denies what he saith, but contradicts not his instance, onely saying, That they that are well versed in natures secrets can determine this; whereas it is well known, that the Silk-worms when they have wound up themselves into their bottomes after twelve or fourteen dayes eat themselves out a winged creature, but have little lust to flye presently for fulfilling their lust, and engendring together: Whereby the male having spent himself falls down, and dies, and the female also as soon as she hath laid her eggs, which is not long after.

As for the Grashoppers, they will flye nimbly with eighty, nay one hundred eggs in them as big as the eggs of Pismires, and the claw-tailed Humble-Bee (of which afterwards) works as diligently, and flyes as deliverly when she is great with young, as when she is barren.

Fabric. ab Aqua pend. exer.

Fabricius concurs with *Cardan*, and therefore renders this as a reason why some creatures lay eggs, and bring not forth living creatures, because if they were detained in their bodies untill they were hatched, with their weight they would hinder their flying: It is true, if many were animated within them at once, it might be so, otherwise not, as is manifest by the former example.

Scaliger de subtil. exer. 391.

And that it is possible for Bees to flye with eggs, *Scaliger* makes good by these following instances: Hee took a Glow-worm engendering with a female, and put them all night into a box with a hole in it. The male continued at his work next day, and at noon giving over, dyes; from that hour untill evening the female laid many eggs which were hatched in twenty hours, and presently went their way; so that some Insects speedily hatch, and perfect their eggs.

Therefore he concludes Bees may copulate in a few hours, and presently lay their eggs.

Likewise he relates, that when he was a stripling, that he took of the greater sort of flies, one marked with white strakes, and holding it some while in the hollow of his hand, being delighted with the shape, it brought forth many white worms notable for their motion. And therefore as shee carried worms, so may Bees eggs when they flye.

But the Flesh-flye, Butter-flye, and many other Insects with-

without all controversie flye about with their eggs in them. Now *Scaliger* at last discovered his little experience in the nature of Bees, when thinking to answer more fully, hee mars all: For whereas *Cardan* saith truly, they are in continual labour, hee denies it, and affirms, that the Bees having gotten honey by labour, they take the benefit of it without any more working: Whereas it is certain, that they never give over working (the season being fitting) as long as there is any thing to gather, and they give over breeding, before they give over working.

The seed being hatched lives, and excerns excrements. All Insects first make a worm, except a certain sort of Butter-flye, which produceth a certain hard thing, like wilde-saffron seed, but fluid within.

Now the generation of Insects in these worms, is not caused in some part onely, as that some part of the egg, turns to the formation, the rest to the nourishment, but the whole alters untill it attain the just and due proportion.

Creatures which produce a worm first, bring forth a small one, which is increased by it self, without any addition, as meal by leaven is made of a little mass a greater. Arist. de generat. l. 3. c. 4.

And again, some creatures have this property in themselves, that they have an increase [illegible] themselves, as the worms of Bees, others gather it abroad, as the worms of Butterflies, called Caterpillars. Idem de generat. l. 3. c 9.

This is, if at all, but partly true; for after they are hatched, there is a small augmentation from the seminal vertue; but as soon as they are capable of food, they must have it, or else after three or four dayes they will dye, as I have often experimented; whereas when they have done feeding, and are shut up with their waxen covers, they will (though out of the Hive) live, and come to perfection, but will bee perhaps longer in their Metamorphosis, than if they were continued in it. I have had some three weeks before they have eaten themselves out.

Creatures shaped without the females womb have in the egge, as well matter of nourishment as matter of generation of the body, because after the egg is laid, and severed from the body (of the Hen, or other creature) it hath no more nourishment from the Hen, but onely a quickning heat when shee sits, but as soon as the chicken is disclosed, there is not much

as in Horses and Mares; but some differ in magnitude, and that diversly, for in most the male is the greater; the chief cause is, for that the males have more strength of heat than the females; now heat causeth greatness of growth generally, where there is moisture enough to work upon: But if there bee found in any creature (which is rarely seen) an over great heat in proportion to the moisture in them, the female is the greater, as in Hawkes. Heat also dilateth the pipes and organs which causeth the deepness of the voyce.

Aristotle delivers that the Drones are bred by themselves if the Commander lives, but if shee dyes, they are produced in the Bees cells by the Bees, and these so bred, are more hardy and couragious than the other; but the truth is (as I hinted before) all Drones are bred by the Bees, when they are wearied, and almost spent with breeding of females, that by them they may have a new prolifical power whereby they may breed females afresh; but the Drones are first bred in the Drone combe, which is afterwards at least a great part of it filled with honey; and then in the latter part of the Summer, they breed some Cephens among the Nymphs.

Arist. de hist. Animal. l. 9. c. 40.

As *Aristotle* could not determine about the breeding of the Drones, so neither of the making of the Drone-comb, sometimes hee layes it down, yet as the judgement of others (suspending his own, as in a thing uncertain and dubious) that they made their own combs in the Hive, or did assist at least the Bees in that labour; sometimes that the Bees made the Drone-combs, but yet onely then, when there was great expectation of much honey; whereas in a Hive stored with Bees, there are not many dayes difference between the beginning of their own combs, and the Drone-comb. Nay they begin the Drone comb and half finish it, before they make the Nurseries (for so I rather call them, than with *Aristotle*, houses or pallaces) for their Queen, of which there bee alwayes some in every hive. And therefore *Aristotle* was deceived, who saith, They made the Queens Pallaces or Nurseries onely, *Cum fœtu largior esset*, when they had a numerous issue.

The Bees never destroy the Drone-combes as *Aristotle* affirms, although they do the Drones, when they have no more need of them for that year.

Aristotle

Aristotle saith, The Drones are useful, if not too numerous, and the Bees because of them more industrious, but wherein they are useful hee mentions not. Nay, hee allows the Drones no service in the hive; but by his leave they are profitable to the well-being and generation of the rest, being the males; and also by their heat in hatching the young, especially after the stock hath cast a swarm or more, there being few Bees left, and most of them in the day time abroad at their work.

But the Drone works not at all, as Mr. *Muffet* affirms, who saith, they gather wax, and sometimes build the combs; but had hee seriously viewed them, hee should have seen a disability to gather, nature having denied them fitting fangs and tongue, for they are very short, and not fitting to gather. Mr. Muffet Theatrum Insectorum.

Ælian tells a long story, how that the Drones lye hid among the combs in the day, but in the night when the Bees are asleep, rob and purloyn the honey, which when the Bees understand (for most of them sleep being weary with working, and a few onely watch) they first correct them gently, and drag them out of the Hives by the wings. But for all that they will not bee amended (for by nature they are gluttonous, and lazie) as soon therefore as they are gone abroad to work, they follow their work, namely fill themselves with honey; but when the Bees return and finde the spoyl, they deal no more gently with them, but kill them out-right.

Once the Drones do not only serve for generation (as hath been shewed) but do also much help the females by reason of their great heat in hatching their broods. And for these causes they are alwayes in breeding-time mingled with them throughout the Hive: Although afterwards (when they have been much beaten, and can go no where single, but one or other will bee on their jacks) they gather all together in a cluster for their safety in one side of the Hive; so that it is true at sometime, which the Philosopher spake indefinitely, *Tenent alveri locum potiorem.* And yet their hanging together will not serve their turn, for the Bees, when they are disposed, will quickly make them part, and depart, when there is no use of them, there will bee no room for them. Plin. Nat. hist. l. 11. c 11. Arist. de hist. Animal. l. 9. c. 40. Mr. Butler.

The Bees breeding, or laying of seeds, beginning to cease in some

cells begins six, or seven more, but all cocentring in the same point with the former; and when they are wrought half their depth, shee injecteth into each a particular seed; but before this is done and finished, shee quickens and hatcheth the former, encompassing with her body, or lying round like a ring about the pin that is the center of the globous depending Tent, or Canopy, but in the inside of it, that her heat may equally transmit it self to each cell, and enliven every seed.

Within a few dayes thus receive they life, and begin to stir, at first sticking at the taile end, and then falling to the bottome, do they raise themselves upward. Now the mother sometimes sits upon, or rather about them, and the latter brood also to hatch and comfort them, and sometimes goes abroad and fetcheth food for them, and giveth it them as a bird her young, with her mouth going from one to another: And as they grow shee worketh the cells deeper, untill they attain their perfect growth, which will bee above three weeks, and then the first brood begin to bee torpid and dull, and receive no more food, which when they refuse, shee worketh a cover over them, whiter than the combs, and they so continue shut up about three weeks, and being transchanged from a worm to a Hornet, eat of the cover, and come forth, and work, and breed their kinde, but then being many, in broad combs.

And as they are fed, so also I am confident are the Bees, although they come to their perfection in a shorter space: For they also after they have fed about eighteen dayes, and attained their growth, are shut up by the Bees, with a waxen cover, and continue so about the like space wherein they are metamorphosed, and eating the cover before them, lift up the rest with their head, and come forth winged creatures.

Arist. de gen. Animal. l. 3. c. 9

Of this metamorphosis of Insects, *Aristotle* thus; Every imperfect conception produceth first a worm, which is afterwards perfected by a change and metamorphosis, and becomes a living creature.

Do. Harvey de generat. Anim. exercitat. 44. 56.

In the generation of Animals formed and transfigured of a matter prepared and provided before-hand, and all the parts begin to appear, and are distinguished together by a metamorphosis, and a perfect creature is brought forth: But some, one part or member being made before another of the same

same matter, afterwards are together nourished, augmented, and formed.

The frame of those begins from some one part as the original, and by the help thereof, the other members are added and joyned together; and these wee say are done by a Epigenesis, or after addition of parts, namely, by degrees, part after part, and in respect of the other, properly is called generation.

After the first sort is the generation of Insects, where the worm by a metamorphosis is bred of an egge, or the beginnings are procreated of a corrupting matter (the moist drying, or the dry moistening) of which as of a Caterpillar grown to a perfect magnitude, by a metamorphosis a Butterflye appears in the just magnitude. [Give mee leave to vary from so learned an Author, and diligent observer.

It is a truth that there is no metamorphised creature, and addition of a new matter or magnitude, yet in many there is a diminution for those that have not adventitious cases, or covers, as Bees, Hornets, and Wasps, but natural hardened shells or covers, as Caterpillars, &c. have so much (as the shells or covers) subtracted from the being and substance of the future Butterflyes.

And this also holds not, that all the parts begin to appear, and are distinguished together for the change and metamorphosis of Insects is not altogether, but by degrees, part after part is changed, and altered, as wee will further make appear in the particulars.

The alteration of Insects in some is made of the whole, as Bees, they having no membranous skins or shells about them, but the cells of the combs, and not of any parts of it: But every such kinde of worm, when it hath accomplished his magnitude and greatness, is made as it were an egge for the skin hardens, and all that time it is immovable from its place, yet moves in its skin, cell, or shell, as is visibly evident, for touch the out-side and they will contract, and stir.

Now the cause hereof is, because nature hastens, and before a bee a perfect egg, brings forth so, that the worm by degrees, grows to the bigness of a soft egg, and after in season, eats through the cover or shell (for they are not reposited in cells as

Arist de gen. lib. 3. cap. 9.

as Bees) and comes forth as a chicken out of an egg being perfected in the third generation. Their metaphorphosis is their perfection, and yet some groundlesly have delivered the contrary. Wonderful, saith one, are the metamorphoses of some creatures, for Caterpillars getting wings degenerate into a Butterflye.

Mizaldus memorabil. cen. 2. 60.

Mr Butler Feminine Mon. c. 4.

The worm being now dead presently the alteration begins from a worm to a Bee which is twofold in shape, and in colour. The first alteration in shape is the division in the middle; then the other division between the head and shoulders, Thus Mr. *Butler*. But it is otherwise, or the transmutation as in a Wasp, begins to be first visible in the superiour part, and the eyes are first discerned, and then the incision between the head and the shoulders, which yet as it grows more perfect, becomes smaller, the middle incision or division is scarcely visible, when the eyes may bee seen, then the legs, and the horns begin to bee framed, and the wings are last finished.

When they are perfect they thrust up the covers over their heads, which hang at their backs till they come forth, their fangs and tongue hang down on their breast, but when they are come forth, they then contract them (untill they have occasion of their use) and draw them up close bending under their throats, that they are scarcely visible, but when they eat or work; their colour is at the first ash colour, and so are their wings, but in a little space they convert to a dark brown untill they grow old, when they become gray.

Arist. de hist. l. 6. c. 1.

And thus it is in many other creatures. Fishes procreated of eggs, have their eyes apparently great, and oblong, contrary to those creatures which are bred of worms, where the head and eyes are last. But hee was deceived, for in the metamorphosis of flying Insects, the alteration begins at the head, and is first visible in the eyes.

As in dry weather Bees gather most honey, suppose it with moderation, for immoderate drought (as in the year 1652.) withers away the flowers; so moist weather produceth store of Bees, suppose it still with moderation, for otherwise (as in the year 1648.) the perpetual raines washed away all the substance of the flowers, that not onely the swarms, but old stocks generally dyed. I lost above half a hundred, 1648. for my share.

Now

Now the reason why moist weather produceth store of Bees, is because the Bees do spat and breed the faster, and preserve and nourish their brood the better by the moisture that faleth in those times, which in dry weather they cannot so well get, or rather approve not so well of, for after a warm rain, you may see them drinking on every herb, you can hardly set your foot on the ground or grass near the Hives, but you must tread on them, and that when their water is just by.

Too much fair weather is destructive to the increase of Bees, for going forth every day to gather, they are there with wearied, and neglect breeding, and so though they leave fat stalls, yet in a short time few Hives, and therefore *Columella* adviseth to stop them in, every third day, that they may attend to breeding. Colum. lib. 9.

The Bees breed best, saith *Aristotle*, when they gather most honey, but herein hee was deceived, for they gather most honey, according to his own position when the honey dews fall, which saith hee, is not *ante vergiliarum ortum*. But wee have often swarms, a first, and a second also out of the same Hive before that time: And generally all good Hives are well furnished with young before that time of the year. Indeed hony is not the ordinary food for the Nymphs, but Bee-bread, which from Mid-March, and in some temperate Springs from Mid-February, they plentifully gather. Aristot. de hist. Animal, l. 5. c. 19.

CHAP. XI.

Of the Hives, and ordering them.

NOw having at last, though not without trouble and travel delivered our Bees, and brought them into the world, it is high time to provide them a house, and a fitting station, which when I have done, with as much brevity as may bee: I will entertain the Reader for his pains, and patience with a collation of sweet meats.

They have Hives of several shapes and matter, in several, and divers Countries, some of Osier, some of Barks, some of Trees hollowed (and this sort the *Americans* about *Mexico* use) some of square boards, three foot high, and a foot broad; Petrus Cres. cent. lib. 9. c. 105.

so in scarcity of Hives, I have known some use Butter-firkins: Some of earth, which they daub with Cow-dung within, and without, because the smoothness is offensive, and the heat and cold also otherwise would bee too extream.

Plin. hist. l. 21. c. 14. *Pliny* saith, The best Hives are made of barks of trees; a second sort of Rods, and a third sort of Wickers.

Each Country almost hath his several fashion, as well for the matter whereof they are made, as also for the manner and form of their making. In our Country, the Hives principally in use, are either made of wickers, or of straw.

The wicker Hives, if they bee not often repaired, will bee at a fault, and lye open unto Wasps, Robbers, Mise; any of these if shee findes but a crack, or crany, will dig her way in. And the Mouse, unless the twigs bee close wrought, although shee finde none.

The straw Hives when they are old and loaded, do usually sinke on the one side (especially if they take wet) and so break the combs, and let out the hony. Yet I have divers which have been continually used above twenty years together, and never lost spoonful of honey out of them. Hives made of the fashion of a Bell, which they use in *Northfolke*, are not so subject to sinking, but being generally large, they are not fit for single castlings; and besides they are colder than the globous Hives.

All things considered, the straw Hives are the best; and the Bees do best defend themselves from cold when they hang round together in manner of a Sphear or Globe, and therefore the nearer the Hives come to the fashion thereof, the warmer and safer they bee; but of necessity the bottome must bee broad, for the upright and sure standing of the Hive, and for the better taking out of the combs; and the top must rise three or four inches higher than the just form of a globe, whether they bee covered with hackles or not, because they delight to hang in a cone, and work from a point; but chiefly to prevent sinking when they are full of honey, or young Bees, to which the broad crowned Hives are generally subject.

So then that Hive hath the best shape that is likest to an egg, with one end cut off, as wee usually order it when wee eat it. It may consist of twelve straw wreaths or rowls,

or

or more, according to the bigneſs of the Hive.

Let the three firſt rowls bee of one magnitude, and compaſs, and about a foot or ſomewhat more in the Diameter, the four next above them more large, bellying out a little each beyond his fellow that the combes may bee more firmly faſtened: Let the other five by little and little bee narrowed to the center at the top that it may bee pyramidal.

And after this proportion, if the Hive conſiſts of more wreaths or rowls, for this is the ſhape of a ſmall Hive. I have ſome conſiſting of ſeventeen or eighteen wreaths.

Hives are to bee made of any ſize between a buſhel and half a buſhel, ſaith Mr. *Butler*. I have many Hives containing five pecks which ſwarm yearly, and laſt (by ſucceſſion) longer than thoſe that are hived in ſmall Hives: And although a half buſhel Hive will contain a competent ſtock, yet the ſwarms for the moſt part are ſmall, and the caſtlings of themſelves worth nothing; and the Bees that are ordinarily left when they have caſt twice are ſo few, that they quickly miſcarry.

However let your Hives bee rather too little, than too great, for ſuch are hurtful to the increaſe and proſperity of Bees. If the Hives bee too great, the Bees will bee more lazy, working uncomfortably, becauſe they deſpair ever to finiſh and furniſh their houſe; but yet if there bee a competent number of Bees, they will work induſtriouſly (though the vacuity bee large) and compleat as much with combes as ſhall bee ſufficient for them. But an over large Hive is prejudicial to their ſwarming.

When you have provided your Hive, clip off, and cut away all the ſtaring ſtraws in the inſide, and make it as ſmooth as you can. The beſt and readieſt way to perform it, is this: Firſt wet the skirts of you Hive, then hold it a turn or two over a blaze of ſtraw, and then take it off, do it a ſecond time, and if need bee a third; and after rub it with a peece of a rubbing ſtone, ſuch as Mowers uſe to whet their ſithes withall. And ſo ſhall you much eaſe the Bees, they will do it themſelves in time, but not without much pains and labour, which might bee more profitably imployed. Howſoever when you have trimmed it as well as you can, yet ſhall you hear them if you liſten in an evening harping like Miſe (as if Miſe were gnawing on

every side) and that for divers nights together.

And if it bee an old Hive, though it were musty, yet holding it over a fire several times, will sweeten it. And the Bees will better like in such a Hive so ordered, than in a new one, not purged with the fire.

Mr. Southern. Mr. *Southern*, and others after him advise, that if Bees finde fault with a Hive, and will not continue in it, to pull out the spleats, and put into it a little quantity of Barly, Pease, or Maulc, and let a Hog, eat it out of the Hive, turning the Hive with your hand as hee eats, that the slaver or froth hee makes may remain in the Hive, and then wipe it lightly with a cloath, and having put in your spleats again, hive your Bees in it, and they will undoubtedly tarry. I never had occasion to experiment it, because that I never had swarm that I could not make to tarry in one Hive, or other.

Many rub their Hives before they use them with fennel, or other sweet herbs, and sprinkle them also with Honey and Beer mingled together, Sweet-wort, Milk, or some other sweet liquor, but I seldome use it, but onely as I said before, purifie and sweeten them with fire; and perhaps set them, before they bee used, open in the aire a few dayes out of the danger of rain.

I have scarce (in forty swarms, and more that I have had in a year) hived one twice, or had any return after that they have been hived, except when the Queen Bee hath been wanting.

Having prepared and dressed your Hives, the next thing that you are to do is to stick them. And various are the fashions that are observed, some doing it one way, some another, Mr. *Levit* prescribes this course. Take a stick of Sallow, or Hasel, about the bigness of a mans thumb, let it bee a foot long, or somewhat more, then cleave it cross-wise from one end till you come within a handfull of the other end, and no further, then bend each quarter a several way, cutting off the sharp edges in the midst of every one of them, then may you put the end that is not cleft into the crown of the Hive, and bending every of them a several way, stick them into the side of the Hive, that they may force the upper uncleft end hard to the crown of the Hive; but if the Hive have a little hole in the crown (as many straw-

Mr. Levit ordering of Bees.

straw Hives have) then cut the upper end of your said crown-tree where it is not cleft small enough to go through a little way, leaving a shoulder on the inside to stay it: And this is to keep the crown of the Hive from sagging down-wards as they wil do (except your Hives bee exceeding good) when they are heavy laden with hony.

Lastly, Take a small stick and cleave it clean through in the midst, cutting both the parts flat and smooth, and put them cross-wise into the Hive within four fingers of the board they shall stand upon.

But this inconvenience I finde in this manner of sticking, that they cannot bee taken out, but altogether, and therefore the combes will bee much broken, and the hooey run out when you take a Hive.

This course I observe; I take a willow stick, about nine, or ten inches long, and (according to the greatness) cleave it into several thin peeces, each spleat I shave till it will bow, then sharpning both the ends; I stick three such spleats in the center of the crown of the Hive, and bow the three other ends to the sides of the Hive (that they stand like so many bows) and there enter them in a triangle. And then after put a strong spleat quite through the middle of the Hive within four inches of the bottome. If it bee a large Hive, I put another cross that (otherwise not) about an inch lower.

That the Hives should have holes quite through them to prevent Spiders webs, or by the wind passing through to blow away any offensive matter, is an idle fancy, yet prescribed by *Florentinus*. Florentinus.

CHAP. XII.

Of Seats for the Hives, and the Bee-garden.

LEt your Bees bee seated not far from your house out of the danger of an eccho; not too hot in Summer, nor in too shady a place in Winter. This counsel may bee profitable to some, but it is of little worth to us where the hottest Sun in Summer if they bee well defended with covers, or a Penthouse Columella.

hurts them nothing, and the greatest frost in Winter (suppose them covered above, and also well slopt below) damnifies them nothing. Nay, I have found experimentally that in a row of Hives standing on the North side of a long Barn, whose height hath intercepted the Suns beams all the Winter, less provision (almost by half) hath served those Hives than would have served others standing alwayes open to the Sun, for coming seldome forth they did eat little, and yet in the Spring were as forward to work, and to swarm, as those that had twice as much hony (otherwise alike) in the Autumn before.

Some Bees will bee late at their work after Sun-set, and if when they return they finde it dark about the hive, they must lye abroad, if not altogether perish. Let the door therefore be somewhat to the West.

Let your Bee-garden bee well fenced from Cattel, and as well as may bee defended from winds, especially let them be secured from the West and South-west winds, which are with us most constant in the Summer. The time of Bees labouring, *Virgil* thus prescribes,

Virgil Georg. lib. 4.

First for your Hives a fitting station find
Sheltred from winds rough violence, for Wind
hinders their carriage ---

Mr. *Butler* would have them defended from the rising Sun, because it invites them to work when the aire is chilly and cold. Suppose there were such an inconvenience, which yet I never found, yet where there were many hives, a fense on the East side could not defend many if any at all. And if they stand on benches with backs or walls behinde them, and a Penthouse over them, they will bee at work in a fair day two or three hours before the Sun can shine upon them.

And for swarms, it is best to uncover them on the first shining of the Sun upon them the day after they are set up (till they know their station) that they may bee allured forth by the heat thereof, yet when the Sun shines hot at noon, let them be sleightly covered.

Columella prescribes that the hives stand with their mouths somewhat to the East, that the Sun may shine on them in the morn-

morning, and make them more early to follow their work; but upon experience, I commend the setting of them somewhat to the West, that (being late often at their work) they may have more light (their eyes being weak) to enter their Hives, and also that they be not prejudiced with the Easterly winds, which are cold and hurtful.

Let their entrance be low (because of the Mouse) but longer in Summer, and shorter in Winter, but in Autumn shortest of all, not having passage for above a Bee or two at once, to prevent the danger of robbing both by Bees and Waspes.

Some prefer single stooles as not subject to diverse inconveniences, which Bees standing on benches (as they imagine) are liable to, they are kept saith Mr. *Levit* by Penthouses from the raine, but neither from the heat of Summer, nor cold of Winter, for they stand naked, the heat or cold easily takes hold of them, especially any great and long frost.

Againe, the Wind many times makes a great noyse in the hollowness of those kind of houses, which sore annoyeth the Bees; Mr. *Butler* saith, that many stalles upon a bench in Summer may cause the Bees to fight, as having easie access on foot to each other.

And againe, standing so near, they some time mistake the next Hive for their owne; and againe, in Winter the benches will bee alwayes wet, which looseth the cloome, rotteth the bottom of the Hive, and offendeth the Bees; and lastly, the Mouse at all times hath free passage from one to another without fear.

I have tried both wayes, and found none of these evils that are objected, in setting Bees under a penthouse, and whereas in the first place it is urged, That they are always subject to Heate, and Colds; I answer, that if any are much offended with either of these extreams, they are the Hives that stand on single stools where the Sun penetrates, sometimes through the hackle and the cold winds every way pierce them; and in the Spring, when they begin to work, will blow many of the Bees from their Hives when they would enter in.

And for the noyse that is occasioned by the Winds to Hives under a penthouse, it is less loud and violent than where it hath an open passage on all quarters; but they are more apt to fight on benches than on single stooles. In many years observation, having

having more Hives upon benches than ever I knew any to have on single stooles, I never had any robbed by his next neighbour, but most commonly (if at all) by some of another Bee-fold; and whereas it is objected, that in Winter the benches will bee always wet, I answer, that this objection is altogether frivolous, nay false, for the same cause shall wet the single stooles that will wet the benches under covers; nay, they are much more subject to it, for only a driving raine from the South can wet a little at most before the entrance, which the Sun or Wind wil quickly dry, when as they are liable to wet on every side; and for the Mouse, she will more securely visit them where she may unseen (getting under the hackle) eate her way into the Hive,

Mr. *Lawson* new Orchard.

Mr. *Lawson* therefore commends a penthouse.

But if any delight in single stooles let them be of wood rather than of stone, for they are too hot in Summer, and which is worse, too cold in Winter; be careful that they be well covered with hackles, which you must often take off, both to dry the Hives in a Sunny day, and also for fear of Mise and Spiders.

And whereas it is objected, that Bees standing on benches are apt to mistake their Hives, especially the young ones; and if a Swarme return home they will settle upon the next Hives, to their owne and others ruine, and thereby occasion a great loss of Bees; to prevent this, let them stand half a foot at the least between Hive and Hive (it were best a foot) and these miscarriages would be avoyded, and to secure you from Mise, keep a Trap constantly on every Bee board.

Take notice of some advantages that this way you may enjoy, which you cannot so well when they stand on single stools; oftentimes a poor Hive standing by a full neighbour, if they lye out, and the weather be not fitting to swarme, they will (as it were) make a League of amity with them, and first growing familiar, will with their supernumerary Bees (all not being able to work in the full Hive) replenish their neighbour with bread and mear, whereby they will swarme almost as soon as the best, which otherwise would not have swarmed that year, or very late.

But besides (which is more considerable) you may have much pure Honey without any trouble, or loss; about middle

April

April in a warme Spring, obſerve what Hives are full, and begin to lye out, and ſet a Hive with the Combs that the Bees dyed out of the Winter immediatly before, next to ſuch a full Hive, and you ſhall have them work into it preſently, and carry in abundance of Honey; of neceſſity many of them muſt have been idle in their owne Hive, there being no roome for half to work; they take this as a retiring houſe which they will work in, and ſtay in too, night and day, only keeping an intercourſe with their owne, which will ſwarme never the later, and as ſoon as by the emiſſion of a Colony there is roome made in their own Hive, they will goe againe to their Leader and leave their proviſion; if ſome few ſtay when you take it, knock them out, and they will returne to their old habitation; I had this laſt year, one thouſand ſix hundred fifty ſix, in four ſuch By-hives thus gathered, in eight dayes before the end of *April* neere four gallons of Honey, and the Hives alſo ſwarmed in *April*; this Honey was pure Virgin Honey, as white almoſt as milk.

But if they ſtand a week in *May* and ſwarme not, then take the retiring Hive and carry it ſome diſtance from the ſtoole, and knock it on the crown and ſides, and they will all goe out to their owne Hive. But if you dare not venter on this courſe, then drive them into an empty Hive, and the day following knock them out neer their owne Stock, and they will quickly return into it. By this, conjecture how much honey Bees gather in the Spring, but of this more afterwards, ſo that it is neither for want of roome, or ſtooles, or wit (as ſome imagine) to ſet Hives on benches under a penthouſe.

Mr. *Butler* deſignes to ſet ſixty three Hives of Bees in a plot of ground of fifty foot ſquare (if any, ſaith he, be ſo happy to attaine this number, which I have much exceeded) but I would rather adviſe to ſet your Hives if you have many, at a larger diſtance, if you have roome, whether upon ſingle ſtooles, or upon benches, namely, not above ſixteen, or at moſt twenty in a row (ſtill take notice to ſet them from Eaſt to Weſt) and three or four rodds to the Southward, another row, and ſo according to your numbers, or at double that diſtance if you have roome enough, for it cannot otherwiſe but often fall out, that you ſhall have many ſwarmes riſe together, or before you ſhall have Hived the firſt, eſpecially in a plentiful year, to your no little diſturbance,

longer any matter of nourishment, but it must receive it elsewhere.

Aristotle acknowledgeth that they void excrements, and can there bee excrements without a supply of food, or a mutiplication of a little seed above a hundred fold by the seminal vertue, or ambient aire, especially where the excrements are four times so much as the seed, or egge was at the beginning; yet *Aldrovandus* concurs with *Aristotle*, saying, That the worms of Bees and Wasps have within them that which is the matter of their augmentation; the contrary whereof is evident, for if the Hives be not provided before hand, or supplied daily with food in stormy and unseasonable weather, the young brood will dye in the cells, and you may see the old ones carry them out in abundance upon the first change of the weather, and then breed again.

Often towards the end of Summer, if hony-gathering bee not plentiful, they will draw out the young unfledge Cephens, and sometimes (though rarely) the Nymphs, lest for want of sufficient meat they should all starve together.

Fishes produced of eggs (as almost all are) either within the females, or without them, at first receive no meat, *sed crescunt hausto ovi humore*, but afterwards are nourished when they glow with the river water.

Dr. Har. de gen. animal. exer. 44. In the generation of Animals which are procreated by an after addition of parts (as the chicken in the egge) there is not to bee sought another matter, out of which that which is to bee produced, is to receive the shape of a body, and another out of which it is made, nourished, and increased. But here in the eggs of Insects, it is otherwise, because they are not at first perfect, and therefore must have an increase, and augmentation elsewhere, untill they attain their just magnitude.

Harvey de gen. exer. 52. The eggs or worms of Insects have from without them that whereby they increase. But how they have it, is a ridle. Seeds of herbs, as Beans, &c. attract by their husks, or shells the moisture of the ground, which they suck in like spunges, and are therewith nourished as well as if they received the same by veins.

Idem exercitat. 9. But thus the worms in the combs cannot bee fed, the meat being remote from them.

Idem exer. 6. The Bees vomit forth the honey which they have gathered

and

and digested in their bellies, and lay it up in their Hives, and after the same sort the Hornets, and the Wasps nourish their young. The assertion is not true, or very ambiguous and imperfect. If hee understands that the Hornets and Wasps empty into their cells what they collect, and gather, then is it not true, for they lay up nothing that ever I could finde. If it bee understood that they feed their young with what they gather, as also the Bees, with what they gather, and also with that which they have formerly injected into their combs, when the weather will not permit them to gather abroad, than it is a truth, but darkly, and imperfectly delivered.

So then wee see after that they are disclosed, they must have meat; out of their cells they cannot come, nor creep, they are not *locomotive*, like Caterpillers.

Now the main Query is, how they should have it? And the ignorance of this caused *Aristotle*, and others to deny, that they received any, so that from the history of their being a worm, to their metamorphosis into a Bee, wee hear of nothing.

Concerning this, I was long without satisfaction, and finding that it was impossible to observe the particulars among the Bees, because of their numbers and closeness, I sought to finde it out by observation in other Insects of somewhat differing, yet of a like nature, in many particulars. I considered that yearly in my empty Hives there bred Hornets, I took notice therefore daily of the progress and order of their work, and generation, which I found to bee thus:

The Hornets neast is begun by one mother, or breeding-hornet at the first, which in the top of an empty hive wrought a very short little drossie pendant peg or pin, about the bigness of the tag of a point of the outer dry parings of pales, or other old timber with a mixture of a gummy liquor that flows from oaks principally (of which matter are all her combs framed) this short peg shee made the foundation and center of a Canopy, or Tent like to a half globe, in the center of which with in she worketh six or seven hexangle cells, all concurring and meeting together in the center, but all jutting out on each side downward, and having wrought them half their depth to an angle of every cell somewhat above the bottome, shee injecteth into each a several seed, and then on the out-side of those

and prejudice: Whereas ſtanding at that diſtance, you ſhall more frequently prevent it; and the more, if you have a row of trees planted thick to the Southwards of every row of hives, ſome two or three rods diſtant, where they will readily light and ſeek no further.

Another inconvenience of many hives ſtanding upon ſingle ſtools one before another is, that ſometimes the ſwarms will ſettle on the hackles of the hives before them, and if you bee not preſent, and ſpeedily hive them, hazzard the loſs of the ſwarm, and perhaps the ſtock too, as I have found by experience.

Let the ground before your ſtools or benches, for a rod or two at leaſt, bee kept ſhort with often mowing, for long graſs and weeds, much more Beans and Peaſe are prejudicial: for the young weak Nymphs falling on thoſe ſhady places (except the weather bee warm and dry) are in danger to bee chilled, before they can riſe again.

Let it not bee a bare ground, for in Winter it will bee wet, and chill the Bees when they light on it, and in the Summer duſty, and falling on it if they riſe not preſently, but go a little, their feet being dew-clawed, and ſcabrous, will quickly fur, and they will bee ſo clogged, that they will not bee able to riſe at all.

Let them not ſtand above a foot, or a foot and a half from the ground at the moſt, for if they ſtand higher (as moſt ſet them) they are more ſubject to the violence of the winds, for though they do well enough abroad in windy weather, yet when they return home, eſpecially in the Spring, they will bee beaten down beſides the hive (and the more if they ſtand upon ſtools than on benches) and if there bee a preſent ſhoure (the weather then is variable) or the Sun ſuddenly over-caſt, they will quickly chill, and periſh.

That they infect one another with their ſmell if they ſtand too near together (as Mr. *Levit* ſurmiſeth) I never found, nor do I beleeve. And if great noiſes offend them, the higher they ſtand, the more are they ſubject to them.

I have obſerved that Bees flye more frequently to their work Eaſt-ward than any other way, though there bee as good gathering to the Weſt.

Smoak

Smoak is very offensive to Bees, let them not stand therefore near a Brick-kilne, Lime-kilne, Brew-house, or where any long continuing smoak may beat down upon them.

Let your Bee-garden, or the ground adjoynin to it, bee planted with all sorts of Plumbs, Cherries, Apples, Pears, Goos-berries, Rasps, Ribes, and beds between planted with all sorts of flowers that they delight in, I will give you a Catalogue of them in their proper place.

The humble Plains, or lowly Vallies are commended as the best place for a Bee-garden. Columel.

CHAP. XIII.

Of the Bees work.

WHen the Earth begins to put on her new apparel, and the Sun runs a most even course between the night, and the day, then most commonly, sometimes before in warmer seasons, the industrious Bee hating idleness more than death, diligently visits every tree and flower that may afford her materials for her livelihood. Hear how an ancient Poet expresseth it.

When forgot had the Earth his poor estate
Of Winter, that him naked made, and mate,
And with his sword of Cloud so sore grieved,
Now hath the attempre Sun all that relieved,
That naked was, and clad it new again,
The busie Bees of the season fain, &c.

Chaucer Prologue to the legend of good women.

Pliny was deceived in the time of the Bees working, for hee saith, they lye quiet in the hive untill after the rising of the *Vergiliæ*, which are the *Pleiades*, or seven stars in the neck of *Taurus*, about the third of *May*.

This incessant labour while the time permitteth, with the three singular effects thereof, working of wax, making of honey, and the feeding of their young. The Poet in few words hath elegantly expressed.

Virg. Geor. l. 4.

But when bright Sol hath banish'd Winter chil'd
Under the Earth, and Summer light hath grac'd
The skie again, over the fields and woods
They wander streight, lightly the brinks of floods;
They sip and taste the purple flowers, from thence
(What sweetnesse ere it bee that stir their sense)
Care for their brood, and progeny they take,
Thence work their wex, and bony clammy make:

Arist. de hist. Animal. l. 5. c. 19.

Bees gather of all things which have flowers (as it were) in a hose or socket, and of all other things which are sweet; but either assertion is too general, as wee will shew when wee particularise what they gather of. *Scaliger* commenting upon him, goes further, and saith, They gather also of bitter, and sharp things, as Raddish, and Mustard-seed, but hee mistook himself, for the flowers (which they onely gather of) are neither bitter nor sharp.

Æli: n l. 5. c. 2.

The fabrick of their combes is an inimitable excellency, without all rules or compasses do they make their hexangle cells. As soon as they are furnished with a new house, they begin their work.

Arist. de hist. Animal. l. 9. c. 2.

They gather not whatsoever some groundlesly imagine of the Sallow, Elm, or other trees any gummy substance other than wax. Indeed the Hornets, and Wasps suck the sap that leaks from some Oaks, Elms, and other trees, wherewith they temper the dry rossie drosse, that they gnaw off from old decayed posts and pales, of which mixed together they frame their combs.

Much adoe the Ancients make about the foundation of their work, which they conceit to bee framed of some tough and glutinous matter other than wax, and they fancie a triple foundation, for the combes, all of such tough, but pliant, and limber stuff, differing somewhat one from another, and all from pure waxe: The first foundation they call *Commosis*: A second, which they over-lay the former with *Pissocera*; and the third, wherewith they cover the two former *Propolis*.

But whatsoever they fancie, the foundation of the Combs is not any other than ordinary waxe: Take an old Hive wherein some remnants of the Combs have been left sticking to the sides,

ſides, or if there bee none, fixe towards the crown of the hive in ſeveral places, little fragments of waxe, and hold the hive a little over a blaze of ſtraw that the waxe may melt and diffuſe about the ſides of the hive, and ſuch a hive will they more contentedly work in than any other, preſently to that foundation of wax, faſtening wax new gathered from the flowers (for in ſome Iſlands plentiful of Bees, there are no trees for ſome miles, as Fowlneſs, &c.)

They faſten the firſt wax near to the center of the hive, if they bee many, but if there bee few Bees then neer the ſide, they make their combs perpendicular, beginning at the top, and ſo working down to the bottome; the heat of the Bee (that I ſay not of their breath) maketh the wax warm and pliable, that at the firſt gathering they can work, and turn it to their purpoſe.

They will not onely work artificially the wax they gather into thin hexangles, but blow and ſoften, and work a ſolid peece of wax into a comb, as I have often experimented, putting a peece of wax under a hive almoſt combed to the board.

The order of their work is thus: They faſten their firſt wax to the hive, and adding more ſtill, make firſt the middle between the cells, and having wrought a little of the thin bottome, than on either ſide begin to raiſe the hexangle cells, and ſo ſtill deſcending to the bottome, as ſome are fully finiſhed, others are but half way, others new begun.

Their combes are placed otherwiſe than the Waſps, for the Waſps hang theirs one under another, and the Bees theirs one beſides another, beginning ſtill at the top, and at that diſtance that a Bee may reach from one to another. And uſually ſuppoſing them to ſtand with the entrance into the hive Southwards, they faſten and order them ſo, that in the breadth they are from Eaſt to Weſt, thereby better ſecuring themſelves from cold.

Their cells are made ſix-quare, according to the number of their feet of that length and wideneſs that each of them may eaſily contain a young Bee. More particularly they make their combes with ſuch artificial prudence, that they ſeem to out-goe *Archimedes*, for the wiſe Bee is not ignorant of Geometrical inventions, all her cells are hexangles, and have equal ſides, Baſil Hexem. Homil. 8.

not leaning by courſes right forwards, that the loweſt being joyned to the empty one, may not be preſſed or prejudiced, but the angles of the loweſt hexangles may be a baſis and ſupport for that that leanes upon them, that they may ſecurely hold up, and bear the burdens put upon them, and the Hony may be contained ſeverally, and apart in every cell.

And againe, the Bees contrive their Hony-cels both wiſely, and artificially, for diſtending the Wax into a thin membrane, they frame together many and numerous cells, that by the frequency of the binding or knitting of the ſmall cells one among another, there may be a ſtay or prop for the whole work; for every cavity or cell takes faſt hold of his fellow, being ſeparated by a ſmall diviſion from it, and all joyned to it.

And laſtly, theſe pipes, or cells, are twice or thrice arched, and framed together like the rafters of houſes.

Nicetis comment. in Greg. Nazian. orat. 43. to. 2.

Or they thus make their hexangle cels, which with a divers and oppoſite order anſwer one another, for ſome are placed at a right line, others are inſtead of foundations to them that lye upon them, and ſtaies for the hony, both for the elegancy, and alſo the ſecurity of the work; ſo wiſely and skilfully doth ſhe fabricate her Store-houſe, for drawing out the Wax into a thin skin, or membrane, ſhe makes thick and continued cavities, ſo as that thick compoſition of ſmall things among themſelves doe ſuſtaine and underprop the whole work, for every cell doth joyn or hang to his fellow, being divided by a ſmall partition, and alſo (as before) conjoyned together.

In a word, the cells are ſo framed that they have two or three floores or rafters, for ſhe is affraid to make but one through the whole cavity, leſt the hony preſſed down with the weight, ſhould ſink to the external part.

Now all the cells in every Combe are hexangle, and equilateral, not leaning ſtraight forth one to another, leſt the loweſt parts joyned to the empty ones ſhould be too much burthened, but the angles of the lower hexangles are inſtead of a baſis, or prop to the ſuperiour. After this faſhion the Bee frames her work, varying right lines with angles.

Elias Creteenſ. Antiſt. com. in Greg. Nazian. orat. 2. de theol.

And thus ſaith another, where had the Bees ſuch ſtudious induſtry and workmanſhip, that they ſhould after ſuch diverſe manners knit together their Combes by hexangle Pipes turned

one

one againſt another, which connexions made wiſely, and with much cunning, doe hold together by hexangle pipes, which pipes are the long and concave Store-houſes for the Hony; now theſe are oppoſite to, and turned one againſt another, for ſome are placed ſtraight, others on the contrary are obliquely ſtretched forth on the bottomes of them which are drawn forth right, which doe afford their ſides for the pipes that hang over, inſtead of a foundation, and as it were a ſhore, whereon the hony may reſt.

Now what *Euclid* buſied in repreſenting lines which are no where, and anxiouſly labouring in demonſtrations can imitate them? The frame and manner is moſt curious, with holes on both ſides of the Combes, many hundreds, and yet they are none of them juſt one againſt another, but placed triangular one among three, and that moſt neatly and artificially, which argueth their feeling to be good, for they doe all in the dark.

Each hexagonical bottome of one ſide, anſwereth to three third parts of the hexagonical baſis of three contiguous cells on the other ſide, meeting all in one angle right in the center of the oppoſite bottome, as in this forme; which is ſo artificial, as well for ſtrength and beauty, that no Schadon though the thin bottome of his cell ſhould faile, can break thorow into a cell of the other ſide. He that ſeeth this, ſeeth he not a wonder? Mr. But. Fem. mon. c. 6.

How much Wax they bring at once doth appear by the new Swarme, whoſe firſt weeks work is ſpent chiefly in building Combs, wherein they are ſo earneſt, that it falleth out with them, as it is in the Proverb, *The more haſte the worſe ſpeed*; for part of many of their burdens doe fall from them before they can faſten them to the combes.

You may ſee great ſtore upon the ſtoole by the skirts of the Hive, like unto the white ſcales which fall from young Birds feathers (but whiter and brighter) and therefore ſome have imagined that they alſo are ſcales, which the young Bees doe likewiſe ſhed from their wings; but put you ſome of theſe parcels ogether, and you ſhall quickly be reſolved of that doubt.

The Swarme when it begins to work falls low towards the bottome of the Hive (in appearance filling it) that there may be a vacuity and hollowneſs above, that thoſe that work (for at

firſt

firſt all cannot) may neither be crowded, nor diſturbed, but as the Combes deſcend, ſo doe the Bees aſcend, and after a week or ten dayes will be all above.

Now to ſay ſomething of their gathering of Hony, which they fetch in little or much nine moneths in the year; this is of two ſorts, the one pure and liquid, called therefore by ſome *Nectar*, as the other which is groſs and more ſolid *Ambroſia*, and both of them are the Bees food, but in ſeveral ſeaſons.

The groſs hony *Sandaracha*, or Bee-bread, is gathered by their tongues, with the aſſiſtance of their fangs, from whence it is conveyed by their fore-leggs to the thighs of their hind-leggs, and that ſo nimbly, that unleſs you have a quick eye you cannot perceive it. In the Spring, when the air is colder, and the Bees duller at their work, it is more viſible: namely when they gather off the Aglets, or Catkins, of the Hazel, or the Willow a little after.

Many out of curioſity have ſuppoſed, that they might be able to obſerve the Bees work if they had a tranſparent Horn-hive, as a certaine Conſul in *Rome* had, or a clear Glaſſ-hive; but the vanity of this opinion will quickly appear to any intelligent and rational man; for imagine the Hives were more tranſparent than Chryſtal, unleſs the Bees alſo, and all their work too were tranſparent as well as the Hives, this cannot be; put an opacous body into the hollow of it, your ſight is dulled and darkned, but more when they once begin to frame their Combes, the foundation of their work, which they frequently compaſs round about; and howſoever ſuch Hives would not be profitable, for they are ſubject to violent heats and colds, and therefore earthen Hives were juſtly condemned by the ancients.

Guliel. de Conchis.

But if any be deſirous to ſatisfie himſelf, as much as is poſſible, I will direct him in a more certain way, often experimented by me, yet I ſay not, that I will altogether undeceive his expectation.

Let the board or plank whereon the Bee-hive ſtands have a ſmall hole, or cleft thorow the middle of it (bigge enough for a Bee to goe through) or let the Hive ſtand a little over the board or ſtoole, and when the Hive is full you ſhall ordinarily have them work Combes to the bottome of the board under the Hive; I have had under one hive ſix or ſeven Combes about a foot

foot long a peice, wherein they bred their young, laid up their hony and Bee-bread as in the hive; and although they were in the open air, yet was I thereby little the wiſer, only ſometimes in a colder ſeaſon I have obſerved them blowing, and working of the lower part of their Combe, but was not any thing at all enabled to underſtand the generation of their young, or other curioſities which were performed in the inmoſt combs, and within themſelves (except the Bees and their work too, had been tranſparent) they ſtill ſome of them encompaſſing their work; and therefore except you can with your eye penetrate a ſolid body, you will conceive thereby little of their work (only ſometimes on the edges of their Combs) and much leſs in a Glaſs-hive.

They unload into the empty cells the Bee-bread which they have gathered for food for themſelves, when they cannot goe forth to work, and alſo to feed their young, but if it continue any long time uneaten, it wil grow dry, inſipid, and ſower, and thereby as taſtleſs, ſo uſeleſs, and oft cauſe the Bees to forſake their Hives (as ſome ſuppoſe) but this is never the chief cauſe of their departure, but rather paucity and fewneſs of Bees, having over-ſwarmed, or elſe the loſs of their commander. For, hive a ſwarm into old combs where is much ſtopping, yet ſhal you finde that they will thrive wel, for they wil draw it out of the cels with their fangs, and carry it forth. And let the combs be never ſo old, except they have taken wet, and ſo be rotten and criſpie, they wil like well of them, only if they be very old, they will doe as Maſons doe with old ſtone buildings, take down the out-part and work it again with new materials, whereby it ſhall be as good as new, and they continue as long, and as well in them, as if they had been put into new combs.

Into old combs (after nine or ten years ſtanding the Bees by caſualty dying) I have hived little or late ſwarms, which have continued in ſome of them ten years more.

Sometimes my owne, ſometimes my Neighbours Bees have trimmed up ſuch Hives as they have found ſtanding (the Bees being dead) and have gone of themſelves into them, and thrived better than others hived into new hives, or new combs; ſo that blackneſs (as it is commonly thought) is not an infallible ſigne of a faulty hive, for the combs have ſucceſſively ſundry colours.

The first colour is white, which in a good Hive before the end of Summer will turn to a light yellow, and by the beginning of the next Spring, this light is changed into a sad colour, and so by degrees it becomes brown, and then black, but not in all parts of the Hive alike, for the combs will bee black before, and brown in the middle when they are yellow, if not white in the backward combs. And this alteration of colour, is caused by the heat of the Bees, who lying for the most part before, do sooneſt discolour them; but the blackeſt combs (tried or melted) will turn again to yellow.

It is not amiss (especially if the Hives bee poor) to cleanse away in the Spring the dross and filth that the Bees have contracted all Winter, when they could not go abroad; but for fuming of them, as some require, I never saw any cause, nor found any profit in many years that I have been conversant among them.

To seek (as *Varro* requires) if there bee divers rulers, because divisions would make them lazie, is a ridiculous, if not impossible task: They kill after the last swarm all of the blood Royal, and in the Spring early breed new, that they may bee ready to go with the first swarm.

The Vulgar when they see the Bees go home laden with Bee-bread, suppose they carry wax, and so they call it, but if you taste it, you will easily resolve your self.

Besides, if you would coagulate it together, with the heat of your fingers (as you may wax) you cannot, but shall finde it crumble, and not stick together like wax. Put it into the fire, it will not melt like wax; besides, it is of divers colours according to the quality of the flowers, or plants whereof it is gathered, so that by the colour with a little observation, you may say of most of the Bees, when they return with it, where they have been gathering.

Taste it when it is new gathered, it is sweet, and not unpleasant, but not so sweet as honey.

And that it is not wax, take notice of an old stock into which they carry plentifully of it, and yet at the end of the year there is no more wax (if so much) then there was in the beginning. Whereas a swarm will sometimes work down half their hive in a week, and yet you shall see them carry little of it if any at all.

And

And the reason that the old stocks carry in so much, is, because they have many young ones to feed, whereas a swarm for the first ten dayes, ordinarily have not hatched much spat, or young brood, and they feed for the most part abroad, and therefore need little of it in the Hive.

The liquid honey the Bees suck or gather with their tongue, whence they let it down into their bottles, which are within them like bladders, each of them will hold a drop at once, you may see their bellies strut withall. Many think because they see nothing on their thighs, that they come home empty, but they are better, and more heavy laden than the other.

This sedulous diligence and indefatigable industry of the Bees is most evident and eminent in the Spring, after they have been long confined to their hives with the Winters frost and cold, but being set at liberty by the Suns warmer beams, they speedily scoure over hills and dales gathering of every blossome, and flower as greedily as the griping Usurer graspeth gold, which diligence of theirs, is notably expressed by a Modern Poet.

Quales vere novo sicullæ sub collibus Hyblæ
Vallibus, aut viridis lætè fragantia Hymetti
Exercentur apes, flavulis ubi pinguibus agmen
Prodit mane novum, & cælo bacchatur aperto.
Hæ veris populantur opes, Tymbræque laborant:
Illa Apii lachrymam, & graveolentis Centaureæ
Narcissique legunt florem, Casiasque rubentes:
Cætera dum legio tectis ascripta, senaces
Suspendunt cæras, & mella liquentia fundunt.

Ælius Julius Crot. a Bidyt. 3.

Thus in the Spring the diligent Bee spreads forth her wings, yet stiffe as it were with the Winters cold, and with haste leaving the hive, flyes to the flowery Meads and pleasant Gardens.

Greg. Nazian. orat 43. c. 2.

But for your further delight, consider the Bees labour, in the words of one of our best English Poets, yet somewhat altered, because not intended by him for this purpose.

The Woods, the Rivers, and the Meadows green,
With her air-cutting wings, she measureth wide,

Spensers Muiopotmos.

Ne doth shee leave the mountains bare unseen,
Nor the rank grassie Fens delightes untri'd;
But none of these how ever sweet they been,
Mote please her fancy, nor cause her t'abide
Her choiceful sense with every change doth flit,
No common things may please a wavering wit.

To the gay Gardens her unstaid desire
Sometimes her carrieth, to refresh her sprights,
There lavish nature in her best attire
Pours forth sweet odors, and alluring sights,
And art with her contending, doth aspire
T'excel the natural, with made delights.
And all that fair or pleasant may bee found,
In riotous excess doth there abound.

There shee arriving, round about doth flye
From bed to bed, from one to other border,
And takes survey with curious busie eye,
Of every flowre and herb there set in order;
Now this, now that, shee tasteth tenderly,
Yet none of them shee rudely doth disorder
Ne with her feet their silken leaves deface,
But pastures on the pleasures of each place.

And evermore with most variety,
And change of sweetness (for all change is sweet)
Shee casts her tasting sense to satisfie
Now sucking of the blooms of herbs most meet;
Or of the dew, which yet on them doth lye
Now in the same bathing her tender feet.
And then shee pearcheth on some branch thereby,
To weather her, and her moist wings to dry.

And then again shee turneth to her play,
To spoyl the pleasures of that Paradise;
The wholesome Sage and Lavender still gray,
Sweet Carrowayes, and Cummin good for eyes;
The Roses reigning in the pride of May,
Sharp Isop, good for green wounds, remedies;

Fair Marigolds, and Bees alluring Thyme,
Sweet Marjoram, and Dayſies decking prime.

Cool Violets, and Burrage growing ſtill,
Embathed balm, and chearful Galingale
Goodly Tulips, and breathful Camomile,
Dull Poppy, and drink quickning ſetwale,
Vein-healing Verven, and Head-purging Dill,
Sound Savory, and Baſil hearty hale.
Fat Cole-Worts, and comforting Strawberry,
Cold Lettice, and refreſhing Roſemary.

And what ſo elſe of vertue good or ill,
Grew in the Garden, fetcht from far away,
Of every one ſhee takes and taſtes at will,
And on their pleaſures greedily doth prey, &c.

CHAP. XIV.

Of the ſwarming, and hiving of Bees.

BEes breed in *May*, when there is plenty of honey dews: Waſps in Summer, when the fruits begin to ripen. It is true Bees breed in *May*, but their chief breeding is in *March*, and *April*. And although the Waſps appear not in great numbers untill the latter end of Summer, yet they begin to breed in the Spring. Dr. Harvey de partu.

The old ſtocks having bred in the Spring, and with a new ſupply repleniſhed their hives, they preſently prepare to ſend forth a Colony or two (if the weather prove ſeaſonable) out of every good ſtall.

In extraordinary dry and windy times, many, though they bee full, yet they will not ſwarm at all. For having waited long for an alteration of the weather in vain, and the year wearing away, and they by lying forth under, or about the ſides of the hive, cooling themſelves, and being well provided for, are loath to leave their labours to go anew to labour.

Sometimes it falls out, becauſe they have no Commander

ready. I once had a very good hive full, and multitudinous with Bees, and yet never ſwarmed in many years, I was reſolved to let them alone, to try whether they would ever ſwarm; in the eighth year they ſwarmed twice, and alſo other yeârs after, what might bee the cauſe of their long delay, I cannot certainly aſſign.

The ſwarm conſiſts not of younger Bees, then the ſtock, for there go forth both old and young, and therefore *Ariſtotle* was deceived, who ſaid that the ſwarm conſiſted ofyoung Bees, and was not contradicted by *Scaliger* commenting upon him.

Ariſt. de hiſt. Animal. l. 9. c, 24.

The ſwarm parts not into ſeveral companies, but when there are more Queens than one. Some Drones go along in every ſwarm, but not many, ſeldome a dozen: And therefore whereas ſome lay it down as an infallible rule, That thoſe ſwarms that have not many Drones will not thrive, is not alwayes true.

Many times the weather proving ſtormy, and cold, the Drones will all bee ſtarved, when as the Bees will ſupply themſelves by going ſometimes (though ſeldome) abroad. Nay the Bees often in ſuch ſeaſons jealous of their own ſafety (and knowing them to bee great devourers) will kill them; and yet the weather proving ſeaſonable, afterwards have thriven and proſpered well that year, but perhaps they had a conceptive power by a maſculine vertue from the Drones before they ſwarmed.

It is impoſſible to determine the preciſe time of the year when Bees will ſwarm, but by the forwardneſs of the Spring, and warmneſs of the weather you may probably gueſs.

A warm, calm, and a ſhowring Spring cauſeth many and early ſwarms; but it is to be ſuppoſed if ſtormy, cold, and cloſe weather follow, not a great while together, immediately after. I once had many Hives (the beginning of the Spring being milde and warm) very forward, ſo that by the end of *March* they began to lye forth.

And although the weather within a week of *April*, did ſomewhat alter, yet (being full of brood within which came daily to perfection, they lay forth in abundance by Mid-April, but the Spring continuing tempeſtuous and cold untill a week in *May*, ten of the very beſt wholly periſhed, having many mouths

mouthes and no meat, and not being able (becauſe of the cold) to goe forth to gather any, in *January* before; I am confident the worſt of them had not leſs than three quarts of hony.

Now thoſe that were poor and weak began not to breed ſo early, and though they were not ſo well ſupplied, yet had they few mouthes as they had a little meat, and endured the extremity, and ſwarmed that year, but ſomewhat later than ordinary; the firſt ſort lying forth without the Hive I could not ſecurely feed them, which otherwiſe I would have done, when I perceived them to periſh.

Sometimes alſo in regard of the uncertainty of the weather, early ſwarms are not the beſt; in the year one thouſand ſix hundred fifty two, I had twenty ſwarms before mid *May*, and many more after, and of all, but one ſurvived until the next year, for the year was ſo dry that by Midſummer there was ſcarſe any flowers, and they yeelded little hony, except in the Woodlands, where the Bees among the moyſt and ſhady places found better proviſion.

Many times *May* ſwarms prove not ſo well as thoſe that are caſt in the beginning of *June*, the Wind oft times continuing high and cold, and the ſeaſon cloſe, ſo that without a little refreſhing many ſwarms are like to periſh.

If a ſwarme by bad weather be checked, and hindred in their work the firſt week, they will ſeldome work couragiouſly all the ſummer following.

Dry weather makes plenty of hony, and moyſt of ſwarms, ſo that when a dry ſummer follows a moyſt ſpring, the Bee-folds are rich, but if the ſummer be alſo moyſt, the increaſe of Bees will be great, but becauſe of the ſcarſity of hony, this increaſe will prove a decreaſe; the more ſwarms you have at the end of ſummer, the fewer ſtalls ſhall you have at the beginning of the next, for except ſome very early ſwarms, and ſome good ſtocks which caſt betimes, or not at all, they will all dye for hunger; and the reaſon is, that the weather keeping them much in, they can doe nothing but breed, and when they goe abroad, bring in nothing but Bee-bread and water, wherewith they feed their young, but can finde nothing to lay up in ſtore; ſo that moyſt weather gives them two cauſes of ſwarming, plenty of Bees, and

Ariſt. de Hiſt. animal. lib. 4. c. 22.

Mr. Butler, Fem. Mon.

penury

peaury of Hony; the one makes them able, the other willing, and then neither Winds, nor Clouds, nor Rain can ſtay them, whereas in times of plenty it is otherwiſe.

Ariſt de Hiſt. Animal. lib. 9. c. 40

Before they ſwarme ſome daies, they will by a peculiar and diſtinct voyce, make it known throughout all the Hive, as in the diſlodging of an Army by the ſound of Trumpets, proclaime, pack up, and be gone; ſo that as a preſage of their ſwarming, there is a peculiar ſound heard two or three days before.

Virgil. ——— *And then a voyce*
Is heard, reſembling Trumpets winding noyſe.

Mr. Muff. Theatrum Inſect.

Mr. *Mouffet* miſtakes this place ſtrangely, and applying it to the Bees, ſaith, When the Bees for the Queens tyranny will forſake the Hive (which falls out at the Greek Calends) there is a peculiar and ſolitary voice, as of a Trumpet, heard two or three days before: when therefore they are ready for their flight, away they goe, and if the Tyrant whom they forſake follow them, they put her to death.

But this voyce is not at all, or but ſome few hours before they goe forth with their firſt Colony, it is true indeed always of the after ſwarms, but by the way, if they hear not at all, (which *Ariſtotle* elſewhere denies) to what purpoſe were this call, or proclamation to make ready to be gone?

Varro de re ruſtica, lib. 3.

The ſignes of the firſt ſwarms are ſomewhat uncertain, but lying out, about, or under the Hive, in the mornings and evenings only, is a very probable ſigne of ſwarming, whereas to lye out conſtantly, is a ſigne of not ſwarming.

When they will preſently ſwarme you may ſometimes know, by their gathering together without at the door of the Hive, and not only upon the Hive, but on the ſtoole alſo, where when you ſee them begin to hang one upon another in ſwarming time, and not before, and to grow into a cluſter that covers the ſtoole in any place, then be ſure they will preſently riſe, if the weather hold; but commonly ſome few doe firſt fly forth to and fro the Hive door, with a greater noyſe than ordinary, and ſo allure out more company unto them, and when by this means they have got out a pretty many, the noyſe made by them is more ſmart and vehement, when they begin to dance before the Hive, and making many circling motions turning from, and yet againe returning to the Hive, with delightful melody ſinging a loath to depart,

depart, invite all their Siſters to haſten apace, and wait upon their Queen now on her coronation day.

Their murmuring ſmall Trumpets ſounden wide,
Whiles in the air their cluſtring army flies,
That as a cloud doth ſeeme to dim the ſkies.

Spenſer Faery, Q. lib. 2. cant. 9.

When Bees lye continually forth of the Hive, they uſually ſwarme late, ſometimes not at all that year, the reaſon thereof is, becauſe the Hives being ful of Bees, and therefore very hot, the Bees to refreſh and coole themſelves lye abroad under the Hive, or upon the ſides thereof, whereby the Hive never ſeemes over full; and they having uſed a while to lye forth, finde no inconvenience from their multitudes, and are loath to forſake that plenty which they have painfully gathered.

If they begin a Combe under the board, it is a ſure ſigne of not ſwarming; ſweep them down that hang under, and imbitter the place, and gently drive them into the Hive with a buſh of wet ſtinking weeds, or ſmoke them in, as you ſhall be more fully informed afterwards. But doe what you can, ſome Hives wil not ſwarme at all, or not a great while, perhaps they want a Leader.

Always chooſe a Hive anſwerable to the ſwarme, a forward ſwarme if great, may be put into a Hive that containes ſomewhat more than three pecks, but if it be a prime ſwarme, in the beginning of *June*, into a Hive containing three pecks; if at Midſummer, into a Hive ſomewhat leſs, but I like no Hive that holds not ſomewhat above half a buſhel.

By this time the ſwarme is ſetled, goe preſently therefore to hive it (having Hives of all ſorts alwayes prepared) for fear of riſing again, or of others coming to it.

If it be in the heat of the day, and the Sun ſhine upon it, it will not ſtay long, if it be provided of a place (hive or tree) as ſome are before hand; preſently after they are ſetled, and all their company gathered together, they wil uncluſter, riſe againe, and be gone, and fly forth right thither (not as at other times uncertainly) and wil not be ſtaid by any courſe you can take. If they be not provided before-hand, as ſoon as they are gathered together, they deſigne, or empower ſome of their company to

eſpy out one, and if they return with the news of it before ſwarming time bee paſt, for that day (and they yet unhived) they will preſently uncluſter, and away, otherwiſe they will hang untill the next day. They therefore deal indiſcreetly, that let their ſwarms hang untill night, loſing thereby many, and hindring them in their work; for as ſoon as they are hived, if it bee not late in the afternoon, they will preſently ply their work, and ſometimes make a comb a handfull long before night, and fil much of it with honey, as I have often found, when I have united them to another.

And beſides by long hanging, they will bee wonted to the place, that for ſome dayes after, they will hanker thereabouts, and neglect their labours.

And where there are many Hives, there is great likelihood of others riſing, and then if they bee within hearing, they will flye all together; beſtir you therefore to hive them preſently; and if you eſpy any other to ariſe before you have done, ſtop them up with a cloath (and when you have diſpatched, let them out) but if you have finiſhed before they come forth, or come towards you, cover the firſt with a ſheet untill the laſt bee ſettled elſewhere. But if they flye about the covered Hive, ſeeking to enter there, ſet down a prepared empty Hive by it, and they will often go in of themſelves.

But if two prime ſwarms riſe together, then there is no prevention, but for the moſt part they will ſettle together: Hive half of them into one Hive as near as you can gueſs, and the remainder into another. And if the Queen Bees be divided, they will continue ſeverally, otherwiſe, will go out of that Hive where is no Queen, into the other. When they are all entred into one, knock them down into a fan, or upon a very broad board, and ſet two Hives over them, having firſt laid ſticks along in the fan to bear up the Hives a little from the bottome, that the Bees may on every ſide eaſily enter in, and with a wing or bruſh of weeds, ſweep ſome to one, and ſome to another, as equally as you can. But if notwithſtanding all your endeavours, they will go to one Hive, then fetch a weak caſtling, and knocking down near half upon the fan, carry the other away the diſtance of a rod, or more, and ſet the caſtling over thoſe in the fan, and ſo ſhall you have two good Hives howſoever.

If

If your ſwarm light upon a bough, ſhake them in gently, and ſet them upon a board or fan, underneath the place, having laid two ſticks firſt (near an inch about) about half a foot aſunder, to rear up the skirts of the Hive, that no Bees may bee cruſhed by the Hive, and the Bees may more readily enter. And if any riſe as (uſually ſome will) ſhake them down, and lay a handfull of May-weed, Wormwood, or other wet herbs in the place where they ſetled, and they will quickly remove, and goe to their fellows; but if they light very high, then carry up a cloath with you, and cover them that you have in the Hive, and bring it down with the mouth upwards, and ſet them below (on a fan as before) and fetch the remainder in another empty Hive covered, and when you are down, knock them out by the ſide of the former, ſometime you muſt do it, a third, nay a fourth time before you have all.

If they light upon the body of a tree (they will bee troubleſome to hive) you cannot take half of them in at once, but ſweep with a wing or bruſh of weeds, as many as you can, and ſet them underneath the place, and fetch the remainder, as before.

Sometimes it will not bee amiſs to ſaw down gently the bough (when you cannot otherwiſe well come at them) where they hang, faſtening firſt a little line to it, and ſo ſoftly let it down, or elſe bring it down in your hand. I have brought down many, and hived them with eaſe below. At other times when they have been very high in the middle or out-ſide of a tree, I have carried up a fan, and faſtened it by the ears underneath the ſwarm, and ſo hived them as eaſily as if they had been near the ground, ſetting them in the fan, laying ſticks firſt in it, as I preſcribed before. And in the evening without any trouble, fetched them down, and ſet them in their place.

The manner of hiving is very various and manifold, by reaſon of the many and different circumſtances of the lighting, or pitching, that it can hardly be taught by rules, but is rather to be learned by uſe, and experience, guided with reaſon and diſcretion.

If they ſettle on a dead hedge, or on the ground, ſet the Hive over them, under-propping it if there bee cauſe, and with a handfull of wet weeds ſtir them ſoftly underneath, and they will

go up, and to allure them the ſooner, anoint the edges of the Hive with a little honey, and ſprinkle a little within it.

It will not be amiſs to ſhred, and order here and there ſome boughs of the trees in, or near your Bee-garden, that they may hang out, as it were from the reſt more opportunely to entertain the Bees when they ſwarm. Yet in places where are neither trees, nor dead hedges, they will ſettle upon pales, nettles, mallows, they will refuſe nothing they readily meet with; ſometimes on the very graſs: Thus in the Iſland of *Fowlneſs*.

Mr. Butler Fem. Mon. c. 5.

To cauſe ſtocks that lye out more ſpeedily to ſwarm, divers rules are preſcribed. To keep them cool by watering and ſhadowing of them, and inlarging of the door, to give them aire (alwayes provided that there be no back-door in the Hive) I have with a contrary courſe occaſioned their ſwarming, firſt rubbing the bottome of the ſtool againſt the door well with wormwood, or the juyce of Elder, and all the ſides about the door, and laying wormwood, or May-weed alſo, cloſe to the mouth, and alſo before, above the door; which being done, I have in the heat of the day taken off their cover, ſo that not being well able to continue in the Hive, nor yet to reſt under it, nor on the ſides of the Hive, they have preſently ſwarmed.

A ſecond way preſcribed by Mr. *Butler* is, when they have lain out (although they have had fit weather two or three dayes) then the next calm and warm day a little before noon (when the Sun ſhineth, and you ſee no clouds coming to hide it) put in as many as you can with your bruſh (it is better to ſmoak them in) and ſweep down the reſt, not ſuffering any to cluſter again: Theſe riſing in the calm heat of the Sun, will make ſuch a noiſe, as if they were ſwarming, which their fellows hearing, will perhaps come out unto them, and begin to ſwarm. It is but a perhaps, for I have ſeldome ſeen this courſe ſucceſsful.

When all hope of their ſwarming is paſt, in ſome evening while it is yet light (ſaith Mr. *Butler*) holding a Hive under thoſe that lye out, cut them off with a tight thred held ſtreight between two hands, and carry them to an over-ſwarmer that you would mend, knock them down on a table cloſe before his Hive, into which, becauſe they come without a Prince, they are quietly

quietly admitted, and quickly united under one Commander: Stay there, I have often tried this courſe, but without ſucceſs alwayes; for though they bee without any great conteſt admitted and continue there that night, yet the day following, they will return to their old Hive.

See here the difference between a voluntary emiſſion, and a compulſive; when they go forth with a Leader, you may put them any where, for they have by a voluntary departure, excluded themſelves from their former ſociety, and to return thither again, except it bee in a ſhort ſpace, is capital: They are reputed as enemies, forſaking their own Commander, and going away with another Leader; but if their Princeſs in a ſhort ſpace return with them, there is no queſtion about their admiſſion; but if by a wile they are taken from their own company without a Leader, they will return back again do what you can, except you carry them ſo far that they know not the way.

Mr. *Butler* for ſuch Hives as have not ſwarmed before Midſummer, directs this courſe, to double the ſtall, by turning the skirt of the Hive upward, putting the crown into the rim of an old Pale (or the like) well ſtaked about, that it may ſtand faſt, and ſetting an empty prepared Hive faſt upon it, then dawb them (in the middle where they are joyned) round, onely leaving a paſſage even with that of the old ſtock, and they will aſcend into this, and breed, and work as well as in the old. And in the end of *Auguſt*, you may drive them all into the new, and take the old for your labour.

This courſe ſeems plauſible upon the firſt propoſal, but upon frequent trial, I have found it to little purpoſe: For the Bees having many young ones in the old Hive, and much meat, will not aſcend, but as they are neceſſitated for room, and then work their combs to the old, upwards, and not downwards from the top of the Hive, newly ſet over them; ſo that by parting of the combs which will not bee without trouble, you may take ſome little profit of the combs new wrought, but muſt continue the old Hive to ſtand ſtill, except you mean to take all, I never found any to have wrought above half way upwards, ſo that having no foundation, but the old combs, it is impoſſible to ſet down the new Hive.

Bees will swarm any time of the day, between eight in the morning, and four in the afternoon, but the chief time of swarming, is between eleven and one. Many stocks when they are dispos'd to swarm, will rise in a cloudy season often before the Sun shine upon them, I have had some by eight of the clock; but chiefly in a hot gleam, after that a shower, or a dark cloud hath sent them home, but in hot and dry weather it is not so. The swarming months are *April*, *May*, *June*, and *July*; rarely, though sometimes in *August*.

To judge by the time of their swarming, which will thrive, is very uncertain, because of the variable weather that often follows after, for being checked a little, and discouraged at the first, for a week together, they will scarce work kindly all the year after, so that many (though less, and coming a month after) not hindred at all by ill weather, will bee better than those at the end of the year. And another cause why forward swarmes thrive not after foul weather, is, because they are very ventrous abroad, and by the stormy winds, and unseasonable weather many are diminished, and thereby their increase exceedingly retarded.

Signes of after swarms are more manifest and certain, for about ten dayes after the first swarm is cast, sometimes a little sooner, sometimes a day or two later, the next Princess will beginto tune in her treble voyce a mournful and begging note, as if shee did pray her Queen mother to give her leave to bee gone, unto which voyce if the Queen vouchsafe to reply, tuning her base to the young Princes treble, as commonly shee doth (though sometimes not intreated in a day or two) then shee consents, and the third day after expect a swarm. The first day after the grant, how fair soever the weather be, they will not go, and not ordinarily on the next day, except it bee very fair; but on the third day, though it bee somewhat close, and cloudy weather, yet sometimes the weather proving very cold and windy, I have known them stay five or six dayes after liberty granted.

The evening before they swarm, the young Princess goes calling from one part of the Hive to another, sometimes shee is before, sometimes behinde, sometimes above, but still calls, and resting a while between, shee still renewes her calling. In the morning

morning before, ſhee often deſcends to the bottome of the Hive, with ſhriller and thicker, longer, and more continued notes than at firſt, that none may plead ignorance, but all know, and acknowledge, there is a new Princeſs, and bee ready to attend her when ſhee takes poſſeſſion of her Royalty, dealing herein (but that ſhee is her own officer, and it is no diſparagement, for the Queen mother is her continual aſſiſtant) as Princes on earth that come newly to ſucceed in their Dominions, they make it known by ſound of Trumpets, and Proclamations, in the moſt eminent parts of the Kingdome.

But take notice by the way, that ſometimes the Commonalty (knowing beſt their numbers within, and the ſtate of the weather abroad) not thinking it good to make a diviſion, will after leave obtained, kill the young Princeſs, and all the infants of the blood Royal, but this is not ordinary.

If the Queen mother after a long intreaty be ſilent, then there is no way but one, ſhee muſt dye, and all her Allies. As the Queens voice is a grant, ſo her ſilence is a flat denial: The Proverb here hath no place, *Qui tacet, conſentire videtur*, for without this concent, there is no conſent. Mr. Butler.

Sometimes a third, nay a fourth will ariſe after a ſecond, if the prime ſwarm bee broken; but all (ordinarily) within a fortnight. I have known the laſt (but rarely, and in bad weather) ſeventeen dayes after the firſt.

When the ſwarm is up and buſie in their dance, it hath been an old and common practice, for want of other muſick, to play them a fit of Mirth, on a Baſon, Warming-pan, or Kettle, to make them more ſpeedily light, and keep them from flying away, but this (though ordinary) yet is needleſs in this reſpect, for they will ſettle of themſelves, except they have choſen a place before-hand, which is very near. And then when their company is all out, they will flye directly thither, and your tinging and tinging, will prevail nothing to perſwade their ſtay.

This benefit there is of ringing, that if you have neighbours near, you that keep Bees, you may give notice thereby to prevent wrangling, if ſome of theirs ſhould riſe at the ſame time.

Mr. *Levits* opinion is, That tinging is ſo far from preventing

venting their flying away, that it is often a cause to return them back into their Hive, if not to drive them quite away, for they are amazed as it were, and confounded with the unwonted and clamorous noise.

Mr. *Remnant* dislikes ringing before the swarm bee quite out of their Hive; but if they be on the wing ready to flye away, then prescribes to make the greatest sound you can to prevent it, as also by throwing up dust, Hogs-dung, or Cows-dung to disturb, and trouble them.

Aristotle doubting whether Bees hear, therefore questions whether they take pleasure in the sound because they hear, or for fear, because of the reverberation, and tremor of the aire?

Claudian de sext. Consul. Honorii. That the ringing of Bees anciently practised, was for the former reason, the Poet implies, saying, The Bee-master ringing on his Bason by the shrill sound, labours to recall the Bees when they are flying away; and *Virgil* before him, and before him *Aristotle*, *Convocari eas in alveum aiunt*, they did cause them to return.

Mr. Mussel Theatrum Insector. They flye faster or slower, according to the ringing, if hee strikes apace, they hasten away, but if hee beat leasurely, then they flye slowly.

But if they will not be stayed, but hastening on still go beyond your bounds, the ancient law of Christendome permitteth you to pursue them whithersoever, but our common Law is more uncivil, and yeelds no such priviledge, for if your Bees bee out of your ground, your property is lost, if your neighbour bee not more courteous.

Many directions have been given, to arm them that hive the swarms to escape danger, but except they be about the body of a tree, or setled very high, you may without any cover, or defence securely hive them, otherwise get on a paire of Mittens, or wollen Gloves on your hands, and a thin Cypress over your head and face, and then without any fear, you may safely venture among them.

Second swarms after they are all forth of the Hive, will usually flye about (before they light) longer than prime swarms, the reason is, the Bees knowing that multitudes best thrive together, and they by the smalness of their murmuring sound, being privy to

to their paucity, do by a continued flying about, allure as many as they can to come forth to augment their numbers.

Sometimes ſwarms will ſettle in two or more cluſters, a little diſtance one from the other (ſeldome prime ſwarms.) Now uſually the cauſe is, becauſe there bee divers Commanders, and each gets a company. Hive the greateſt cluſter firſt, and ſet it down towards the other, then into an unſpleated Hive, ſhake down the other, and when they bee all in, knock them down cloſe by the firſt, and they will go together.

Second ſwarms except they bee early, and out of large ſtocks, ſeldome thrive alone: Therefore unite two or three together, and ſo they will bee as good as a firſt ſwarm; you may do it thus, Having hived that ſwarm that you intend to put to another, as ſoon as it begins to bee dark, take a fan, and laying a couple of ſticks on it, ſet your firſt hived ſwarm on them towards one end of the fan, and then fetch the other, and between your hands clap the Hive hard on the one ſide, holding it cloſe to the other, moſt of the Bees will fall down at the firſt clap, but reiterate your knocking, and they will all fall down; and if they enter not preſently, ſtir and guide them to the Hive, with a bruſh of weeds, and ſuch as go any other way, ſweep them to their fellows, and they will all quickly, and quietly aſcend. Within an houre or two, you may (for the moſt part) ſet up the Hive again in his place. I have not loſt forty Bees in uniting twenty ſwarms, beſides the Commanders, which of neceſſity muſt periſh.

Swarms after they bee well ſetled, ſeldome return home again (if you let them not hang too long in the heat) and the chief cauſe of their returning at any time, is the miſcarriage of the Queen Bee, who cannot well uſe her wings, being (perhaps) never forth of the Hive before, and aſſaying to flye, falls beſides the ſtool, ſometimes flyes further, but being quickly weary falls ſhort of her company.

You may eaſily know if it bee thus, for as ſoon as you have hived the cluſter, the firſt inquiry they make is for their Leader (whoſe coming while they hang, they did anxiouſly expect) but now being hived, and miſſing her, they preſently diſcover it with a mournful murmuring, ſometimes bewayling their condition, joyntly crying out together: and then all ſuddenly

whist and silent; and by and by again renewing their sad lamentations, tumultuously likewise running before the Hive, and about the sides thereof, as if they were not onely discontented, but distracted: Others are flying (but pittifully complaining, as they flye) about the Garden with a busie Quest searching for her; and if they do not in a short space meet with her, will all comfortless return to the stock again, whence they came forth.

But if they finde her, or shee be brought unto them, they presently congratulate her return with continued shaking of their wings, and oral rejoycings, witnessing their present contentednes, complacency, and satisfaction, making even their joyfull content in her, something more joyfull than before, as if the felt pleasure at her first return, were more delicious, and ravishing, by reason of the sudden change from that discontent, and distraction in their late loss to an excellency, if not extasie of delight and joy.

But if (not finding her) they return home, the next time they come forth, though in numbers a first swarm, yet not in the manner of their swarming, for the next Princess comes not forth at the will of the Commons (losing their Commander they lose in this respect their liberty) but by petition must obtain leave of the Queen mother, as in second swarms.

Now when you perceive the Bees discontented carriage, presently seek about (beginning at the stock, whence they rose, and going that way, the swarm took) and you shall undoubtedly finde her, for shee is not alone, but encompassed with a guard which will never flit from her, though they starve in the place: Take her up therefore, removing the Bees that environed her (you may do it secretly with a little stick) and carry her to the swarm. And you cannot but with wonder behold the sudden alteration, with what a rejoycing plaudite (their mourning being ceased) do they welcome, and entertaine her; and those that were seeking for her abroad, (although some odds differ) are instantly sensible of their felicity (by their fellows rejoycing) and hastily return to express their content, and bear a part in the general gladnes.

If a swarm light near the place where another was hived a day or two before, when you have hived it, set it ten foot distant from the place where the other stood, for some Bees of

the first hived swarm, will for two or three dayes together hanker about the place, and if they finde a hive standing there, will boldly enter, supposing it their own company, and so miscarry by the others, who take and deal with them as enemies coming to endamage them.

Swarms will the day after they are hived busily follow their labour, but the removing of them from the place where they were hived, doth not a little discourage them; if therefore the weather bee not fair, they will not stir the first day, and except it bee more than indifferent, they will not stir the second day, and so as the foul weather lasteth, droop, and grow faint, and sometimes totally miscarry.

To prevent this, the day after they are set up, when the Sun shines upon them, or howsoever about noon (except it rain) put a little hooey under the hive near the mouth of it, and some at the mouth, and before the entrance (less than a spoonfull will serve) which they will quickly smell, and come down to feed on, and flye forth, and thereby bee acquainted with their new standing, and fall to work upon the first fair weather.

If the weather continue cold and cloudy a week together, without a little supply, they will dye, therefore every day refresh them with a little honey. After they are acquainted with their standing, you may put it into the Hive upon a peece of an old comb in the evening. They can indure four or five dayes without meat, but if the foul weather continue longer, they will hanging by one anothers legs, fall down to the bottome of the Hive, and perish; but fly them not too far, but quicken them daily with a little honey, and you shall keep them strong and lusty (such close and windy weather falls out often in *May*) you shall gain by this loss, for the weather altering, they will not onely subsist of themselves, but by their painfull labours, recompence your cost and care.

If your stocks cast a second swarm after Midsummer, the best way is to return it home again. Hive it as you do other swarms, and about six of the clock knock them out on a table before their stock, and they will go in, and if they come forth again (as perhaps they will) do so the second time, and if there bee occasion, the third also; but look cheerfully when you first

knock them out for the Queen Bee, and take her away, and then shall you bee sure to prevent further and future trouble. And thus shall you keep your stocks full and lusty, which otherwise were in danger of miscarrying, and the swarms (most years) would bee worth nothing.

See the poorest swarms upon a plank, and when they have done working, dawb them round, allowing air, only through two or three quills, and set them in a dry cold place of your house, or barn, and so being little sensible of the alteration of the air, they will sleep much, and eat little.

CHAP. XV.

What Flowers the Bees gather of.

P. Sanflorus Thesaur. Arist l. 11.

IT hath been almost generally received, that Bees gather from all sorts of flowers, good, and bad, sweet, and bitter; some a little, and but a little straiten this vulgar position of all kindes of flowers, both of Herbs, and Trees (saith one) except Docks and Cheesrunnet.

Arist. de hist. Animal. l. 5. c. 19.

Aristotle curtails this a little more, and tells us that they gather of all flowers that have cells or sockets. *Mr. Mouffet* straitens this also, saying, They refuse no flowers, that are fragant, contained in cells, or sockets; but this also must bee narrowed into shorter bounds, as yet being too large, for of many sorts of such flowers, they meddle not with at all.

First, Bees gather not of flowers which have deep sockets, as Batchelors-buttons, Cuckow-flowers, Cocksconb, Jasmin, Cumphilly, Dead-nettle, Wood-bettony, Wild-blew-veare, Teazil Red-bony suckle, rarely, and divers others, and yet these are more abundant with hony, than many that the Bees gather of. And of these the Humble bees gather plentifully, nature furnishing them with larger fangs, and longer tongues than the Bees.

2. Ordinarily they gather not of many little or small flowers, as Rubia, Pimpernel, Scorpioides, Hares-foot, Oliver, Veronica, &c.

3 Not ordinarily of many physical Herbs, as Eriſamon, Agrimony

Agrimony, Century, St. Johns-wort, Mugwort, Mother-wort, &c.

4 Not of bitter Herbs, as Wormwood, Lavender-cotton, Southernwood, &c. yet sometimes of Rue, the flower whereof is scarcely bitter.

5 Not of very dry flowers, as Docks, Sorrel, Mercury, Atriplex, Wheat, Rye, Oats, &c.

6 Not of those that have a strong stinking smell, as Smalledge, Hemlock, Galopsis, Crown-empereal, Cheesrunnet, &c.

7 Not of those that are soporiferous, and Narcotick as Mandrakes, Red-poppy, Night-shade, Black-briony, &c.

8 Not of those that are very cold and unctuous, as Orpine, Houseleek, Prick-madam &c. for all oylie and unctuous things are hurtful to them.

9 Not of those that have a strong sweet smell, as Feverfew, Maudline, English Laurel, Myrthe, &c.

10 Of very few flowers that grow in Ponds, or Rivers.

11 Not of those flowers, that (though they have great hollow bodies) shut hard and close at the top or lips, as it were, as Toads-flax, Snap-dragon, Fox-gloves, which the Humble-bees will open (being stronger) and gather of.

12 Not of very double flowers, as double Primrose, Wall-flowers, &c. except where the leaves are very fine, as the Dent-delion; nor of such as have deep sockets, and have no strings from the bottome to the top of the flower. Nor of such whose strings, or horns extend far out of the flower, as Avens, except there bee an excrescency, or cod in the middle of the flower, as Gillow-flowers have.

Bees sometimes gather of such flowers, as are pernicious and hurtful. The Teil-tree, and the Boxe are very pestilential, so is also the Yew tree. Columell.

If they taste of the flowers of a Cornele-tree, they dye of a scowring, the blowings of Elmes are discommended, and wilde Cowcumbers, as also Woad, which affords a foggy food that overladen the Bees, and makes them miscarry in the fields; throw Salt under your Hives, and they will bee the stronger and lustier. Tulipas kill Bees for closing a little afternoon, the Bees that are in the air are imprisoned, the sides being out-bowing, and Plin. l. 21. c. 12.

ſmooth, they cannot get out, and will bee dead, before the next day when they open.

The Lentick tree from whence the Maſtick is gathered, affords the beſt honey in the world, of which in the Iland *Sio* (anciently *Chios*) is great plenty.

Sands relat. lib. 1.

Bees gather of theſe flowers following, yet of ſome more plentifully than of others.

In March.

Haſel, Willow, Sallow, Enemony, Bunnikin, Daffadil, Violet, Gooſeberry, Cornelian, Miſſelto, Crocus, Elme, Primroſe, Pilewort, Dendelion, Spoonwort, Bears-foot, Black-thorn ſingle Wall-flowers, &c.

In April.

Ale-hoof, Ribes, white, red, black Oak, Peach, March-marigold, Cole, Turnep, Sycomore, or great Maple, Ribwort, Stockgillowflower, Cow-weed, Furſe, Strawberry, Broom, Bean, wilde white Enemony, Bears-ear, Ozier, Plumtree, Cherry, Pear, Apple, Crab, Barbery, Beech, Tear, Maple, Birch, Apricock.

In May:

Water-creſſes, Hull, Angelica, a tall rank graſs, Parſnep, Onion, Leek, Garlick-ſeeds, Dogs-tongue, white Valerian, Tamarisk, Thrift, Sage, Storksbill, Mouſ-ear, Raſpis, Charlock, Marigold, ſmall yellow Honyſuckle, Poppy, Woodbind, Medlar, blew Valerian, Burnet, wilde Tanſie, Archangel, both with the white and yellow flowers, called by the *Tygurines*, Been-ſauge, the Bee-ſuck, Hawthorn, Elder, white Honyſuckle, King-cup, Peas, double Gies.

In June.

Tre-trifoly with yellow knops, and another kinde of Trifoly with long red bloſſomes, and a Trifoly with pale, yellow bloſſomes like a Lotus, but ranker, Dewbery, Blewbottle, Mothmulleine, Lureola, or Diers weed, white Briony, Savory, Origanum, Hyſop, Pondweed with a flowre like Patience, Lang dez beuf, common Thiſtle, Bugloſs, ſometimes, but ſeldome, Burrage, Parſly, Lotus, Liſimachia, Roſes, red, Damask, Velvet, Henbane, Muſtard-ſeed Sharewort, Canker roſe, Daneſwort, Bindweed, Mallowes, Meliloſs, Calamint, Cowcumber, Thyme, which onely yeeldeth Nectar, ſo the

Bu-

Butler; who therefore findes fault with *Virgil*, for ſaying, *Crura thymo plena*, but let any obſerve, and hee ſhall finde they gather as often Bee-bread as honey; and again hee ſaith, The Bees gather not of the Roſe, the Primroſe, the Clove-July-flower, the Peaſe, of all which they gather plentifully, but not of the Peaſe untill the bloſſome begins to wither, and the cod to put forth, and then they gather Sandaracha of it plentifully, eſpecially in the morning. Mr. But. ſem. mon. c. 6.

In July.

Tobacco, Love, Carduus-benedictus, Jacea, Lamplans, Penny-royal, Small Dentdelion, Scarlet Beans, Mayweed, Gourds, Clotbur, Live-long, Horſe-mints, Skirret, Yarrow, Germander, Nip, Sowthiſtle, ſingle, and double July-flowers, Succory, Dill, Clematis Altera, Fenil, Filius Ante patrem, Holy-hock, French-marigold, Coriander, Lavender, Melon, Blackbery, Buck, Jacobea, Stechados.

In August.

Red Eye-bright, Knap-weed, Heath, Virga Aurea, Ivy.

In September.

You are to take notice that many of theſe flowers blow twice a year, as Roſemary, Archangel, Tamariſk, Burrage, Charlock alſo, although not the ſame roots. And ſome continue longer than the mouth whereto they are aſcribed, and ſome begin to blow a little before, but whenſoever they blow, the Bees gather of them, but leſs in Autumne than in the Spring.

Many flowers afford matter of gathering in the morning before the dew is quite exhaled, which in the heat of the day yeeld little, as the Peaſe, and a tall rank graſs, having a ſtalk a foot, and a half long, with a large buſhie ear.

Bees have this property, that whatſoever Flower they firſt begin with, when they goe to work, they meddle with no other that journey, but lade themſelves with ſuch meat alone as that kind yeeldeth; this is a common, but no catholique cuſtome, for I have often obſerved the contrary. Ariſt. de hiſt. Anim. l. 9 c. 40

It is true, if there be flowers enough near at hand, to make up their burden of that ſort they begin with all, they will meddle with no other, but if they have begun to gather of a flower that likes them, and cannot finde enough to furniſh them, then they will make up their load of ſome other.

CHAP.

CHAP. XVI.

Of the ordering of Bees.

IN *February* lift up your Hives on the one ſide nimbly, and with a wing wipe away all the ſharings of combs, droſs, dung, or whatſoever elſe lyes upon the ſtoole, which although the Bees in time would performe, yet hereby ſhal you ſave them a great deal of labour.

If your old Stocks have any crumbling, or criſpie combs, take them out in the Spring, for they cannot work to them; lay the Hives on one ſide, having ready a fire of dried Cow-dung in a Chafingdiſh without a flame, the ſmoke wil drive the Bees inward, and you may ſecurely performe it.

Some tell us of putrefaction in the combs, in regard of dead brood chilled, which combs they would have taken out; but I never met with more than the Bees could rid themſelves of, except when the Bees are almoſt, if not altogether ſtarved.

Weckerus de ſecret. Lib. 8. That they ſo love quiet, that they ſcarce endure the company of men (is falſe) and therefore muſt have walls built about them with holes, to ſee what offends them, is ridiculous, yet commended by *Florentinus*.

Bees are much offended with long hair on head, or face, let ſuch therefore as muſt be often among them wear ſhort hair, or be wel covered, on peril of ſtinging.

If a Bee have ſtung you in hot weather, your wiſeſt and ſafeſt way is to depart for a while, for there iſſues with the ſting a ſtrong poyſonful ſavour, which you your ſelf may ſmel, but howſoever, the Bees wil readily, and knowing thereby that ſome of their company are wronged, wil with eagerneſs ſeek to vindicate the injury on whomſoever they finde preſent in the place, and come about you thick and threefold; there is no way to appeaſe them but one, get away as faſt as you can, and when the uproar is over, you may ſecurely come again.

The beſt time to doe any thing about your Bees, is in the morning before they ſtirre, or when they are new gone abroad, or in the evening, when they are returned from their work.

Virgil. Make the mouth narrow, leaſt the Summers heat diſſolve the Honey,

Diſſolve the hony, or cold Winter freize,
For both extreams alike anney the Bees.

Be very careful about the doore, or entrance into your Hives, for negligence herein occaſions the loſs of more Bees than any other neglect, from the Dor-mouſe, and Tit-mouſe in Winter, and the Waſp, and robbing Bees in Autumn.

Let the doors be ſomewhat long, but very low, not much above the height of a Bee, and let them be more or leſs open, according to the ſeaſons; but rather offend in leaving too narrow an entrance than too large; a thin board in Winter cut in notches like a grate, wel faſtned to the Hive, with Cow-dung and Aſhes tempered together; two notches open in Winter, is enough for a good Hive, one for a poorer; for thereby they are kept more warme in Winter, and more ſecure from enemies.

When they have wrought a week in the Spring, the better Hives may have three or four notches open, and by degrees more, until they be full, and then you may take away the grates altogether until Autumne; but be ſure to ſet them early to the old Stocks that have over-ſwarmed, as alſo to the poore ſwarms, and in a dry year, ſooner than in a moyſt, for the Waſpes wil be more numerous and early, and the robbing Bees finding little abroad to buſie themſelves about, will be ſeeking to plunder poor and weak Stocks betimes.

When you ſee the Waſpes begin to be buſie, and forſake eating of dead Bees, before the ſtooles, venter into the Hives, ſet up your doors to the poorer Stocks, and narrow the paſſage of the better with a little Cow-dung (tempered as before) that it may not be above an inch long.

If you will bee at coſt, it will be very beneficial to have a hurdle made of Oziers ſet before your Hives, even with your ſtools, or elſe boards ſhelving outwards at the bottome, for the Bees to reſt on when they come home weary and laden.

Mr. *Levit* miſſlikes the keeping of Hives four or five years at the moſt, but his reaſons are weak, becauſe (ſaith hee) the combs will be black and unſavoury, and the old Bees are not ſo good for increaſe and breed, as the young, nor ſo ſtrong and luſty for labour; but theſe reaſons are without reaſon, for blackneſs of the combs is no faule, as wee ſhewed before, and

of the age of Bees, wee ſhall treat by and by, onely in a word, note that they are an annual creature, and live not beyond a year with the vantage; on the ſame ground, therefore all the old ſtocks muſt be taken every year.

Many things are neceſſary for the preſervation of Bees, firſt, A competency of food which they will labour for, and compaſs with their own induſtry, except the unſeaſonableneſs of the weather, the ſmalneſs of their numbers, the treachery of enemies, the power of robbers, or the covetouſneſs, or ſimplicity of their owners by driving them too late, or after that by reiterated ſwarming, they have diminiſhed their numbers, for the recruiting whereof, they were well enough furniſhed with brood (although then unfledge Nymphs, yet the hopes of continuance) of which being untimely bereaved by driving, as deſperate, they either forſake their Hives; or if they continue and work, yet can they not ſufficiently breed, and provide themſelves before Winter, and therefore muſt ſtarve.

It hath been inquired by ſome, what quantity of hony wil ſerve a Hive of Bees all Winter: To which queſtion no certain anſwer can be returned, becauſe of the numbers which in ſome hives are more, and therefore muſt have more meat; and alſo becauſe the Spring in ſome years, is more forward than in another, ſo that quantity that will ſerve in one year, will not ſerve in another. But I would not willingly let any ſtock continue, that had not five pintes at the leaſt of hony.

Sometimes it will bee convenient to hoiſt up ſuch ſwarms that you fear will caſt, eſpecially if Midſummer bee paſt, for although they may live, yet ordinarily they will bee weak and poor, and the ſtock whence they came ſo impoveriſhed, that if it continues, it will ſcarce ſwarm the year following.

Raiſe them up by putting four Brickbats at an equal diſtance under the skirts of the Hive, let them go no further inwards than the verges, then dawb them up well, leaving a fitting paſſage for them to go out of the Hive.

I like Mr. *Southerns* judgement to ſet them down again afterwards, the beſt time is in *January*. This Mr. *Levit* laughs at as an impoſſibility, ſuppoſing that they having wrought down to the board, the combs would bee cruſhed together, and many Bees killed; but laying the Hive on the ſide, and

and making a ſmoak (as before) in a cold morning, to drive the Bees up, with a long ſharp knife cut the combes a little within the Hive (as I have often done) and there will be neither danger, nor damage.

Mr. *Butler* adviſeth to ſet them down in the end of *Auguſt*, when by the death of the old Bees, and alſo of the Drones, there is more room made, leſt their ſwarming bee hindred the next year, unleſs they bee ſwarms that have wrought down to the ſtool, which indeed muſt have, and then this advice is to little purpoſe. Mr Butler Fem. Mon. c. 3.

The courſe in our Country which moſt take to get ſome profit by their Bees, is driving, out of a fooliſh pity they will not burn them, but care not much to ſtarve them, and that without any great profit to themſelves, for they uſually do it after they have caſt a ſecond ſwarm about Midſummer, or a week after. The Bees (beſides thoſe in the brood, which would have been a ſufficient ſupply to them) being then very few, and many of them old Bees, which in a month, or a little more, will all dye, and then they will bee by much fewer; as ſoon as they are driven therefore, deſpairing by their own induſtry to ſubſiſt, they will leave the Hive and flye into another, ſo skipping for the moſt part, out of the Frying-pan into the fire. If they work, as ſome will endeavour their own preſervation, yet not one of three in ordinary years out-live the Winter, and they being weak, are often made a prey to robbers in the Spring, or having ſpent their little ſtore, then flye away; but if they out-wraſtle all theſe difficulties, yet they will ſcarce ſwarm that year.

Moreover little hony at that time of the year is ordinarily to bee had; a quart, perhaps a pottle, and this is a liberal portion. Whereas if they will drive them, let them do it early before their hony is conſumed by ſucceſſive broods, and let them obſerve the condition of the Spring, for thereby they may have ſome likelihoods whether they will do well.

I have driven ten Hives in the beginning of *May* (not ſwarming the year before) all which after ſwarmed the ſame Summer, and the prime ſwarms did very well: Or if you will drive, take this courſe, when your ſtock hath caſt a ſecond ſwarm, the night following drive the old ſtock into the ſwarm, and they may do well, except it be late in the year.

Old ſtocks before they have ſwarmed, and early ſwarmes driven, ſeldome miſcarry; I have known them driven twice in three weeks, and full of hony the ſecond time. Nay a fooliſh neighbour of mine drove a ſwarm the third time, and had above a gallon of hony at either of the two firſt drivings, and above three quarts the third time, but it was ſo late that the Bees dyed that Winter.

If you have a ſtock that lay out the year before, and ſwarmed not, and doth ſo the year following, and Midſummer be paſt, drive it, and ten to one (if the year bee indifferent it will do well.)

Now to preſerve your ſtocks, and yet to make ſome advantage of your Bees, take this courſe (except you know a better, but thus I do) About *Bartholomew-tide*, I ſurvey my ſwarms, and all thoſe that I finde not by the weight competently ſupplied, namely with five pintes of hony at the leaſt, I take, and I examine my old ſtocks, eſpecially ſuch as have ſwarmed twice, or oftner, and where I finde few Bees, which you ſhall know, in giving the Hive a little knock with your finger on the out-ſide of the Hive, if the murmur bee ſudden and ſhort, then it is a ſigne there bee but few Bees, but if it bee ſmart and long, deſcending from the top downwards, then it is a ſigne of plenty.

They that have but few Bees, though they bee never ſo well ſtored with hony, yet will not continue over the next Spring, but will bee a prey to robbers; therefore it is better to take them then to loſe them, and their honey alſo; but yet if you deſire to ſave any that are well-ſupplied, then drive a ſwarm that you intend to take into them, and ſo ſhall you have a good ſtock; and thus with Gods bleſſing ſhall you increaſe your Bees, and have a ſufficiency of hony and wax. If you have not, you may take as many of the beſt as you ſhall think convenient.

Some preſcribe to take thoſe that are too full of hony, as (thereby) diſabled to breed, and proſper the year following, but this is but a groundleſs ſuppoſition for ought ever I could finde, having had as good as any other, the combes being generally filled with hony to the board, which I have let ſtand on purpoſe to try whether they would breed, and never found, but ſuch were as full of Bees the year following, as any other; for

after

after working time there is a long time of eating, and if they be numerous with Bees, they wil make roome enough by breeding time.

The manner in a word to take Hives in the latter part of the year is by burning, which briefly you may thus doe; take an old linnen cloath and cut it into long narrow peeces, about two handfuls long, and halfe an inch broad, and then having melted beaten Brimſtone, dip them therein, and having digged a hole near the Hive that you intend to take, let it be ſomewhat more than a foot over, and half as deep; ſet in the bottome of it two or three crotched ſticks, into which put three or four of your raggs ſmeared with Brimſtone, and having kindled them ſet the Hive over, ſtopping the verges ſomewhat cloſe, and your Bees with the ſmoak wil in a ſhort ſpace fall down ſtifled and dead.

For the manner of driving, it is needleſs that I ſhould ſpeak much, being wel known almoſt to every one.

put [illegible] a prepared Hive as near as you can, of the breadth, in the skirt, of that Hive you will drive ſetting it on the ground, put ſheet over it, and wel faſten it with a ſtrong pack-threadround about the Hive within an inch of the skirts, then having a Trivett, Payl, or Firkin ready, ſet the empty Hive therein with the mouth upwards, and then lift the Hive you wil drive, nimbly from the ſtall, and ſet it upon them empty, and gather up quickly the ſheet that hangs down to the crown, and faſten it wel likewiſe with a little line, about an inch from the skirt, and turn them thus tied together, that the empty Hive may ſtand upwards, and knock gently with the palmes of your hands on the ſides; and on the crown, ſometimes in one place, and then in another, and often pauſe, and make a little ſtop, that the Bees may aſcend, and reiterate your clapping againe; in half an hour they wil be all, or the moſt of them gone up, and then carry it to the place where the other ſtood; if you doe it in the evening, let it ſtand unmeddled with all night; if in the morning, let it be before Sun; and if there be any Bees behind, when you take out the combs, ſweep them off with a wing, and they wil finde their fellows.

Many in the Bees neceſſity commend and applaud feeding, when by driving unſeaſonably, or not ſeaſonably uniting (as the

Proverb is) *They have broken their heads, they would give them a plaister*, but for the most part too narrow and scanty for the sore.

For feeding of weak Bees, many things by many are prescribed, I shal be brief in the particulars, because I altogether dislike feeding, except in the beginning of the year, through the backwardness of the Spring, some Hives (otherwise sufficiently furnished) stand in need, or some early swarmes, the weather proving tempestuous, cold, or close, sometimes for above a week together: it wil be very convenient then to relieve them, until the weather alter, and they begin to work, when they wil need no longer your supply, and without a little supply would be so poor and feeble, that they would untimely miscarry, and dye.

The ancients commend feeding of them with Raisins, bruised Figgs; *Pliny* bids set Hens flesh before them, although he acknowledgeth that they eate no kinde of flesh, and therefore in that respect preferres them before the Hornet, and the Waspe.

Mr. Hartlibs Legacy.

The Gentleman that wrote the first large Letter in Master *Hartlibs* Legacy, a wel-wisher to Bees, although little skilled, (as it appears by his Projects) in the nature or ordering of them, taxeth a general deficiency in this Kingdome in this respect, as if we were more negligent, or ignorant than some of other Countries; for the glory of our Nation let me plead (which he ignorantly traduceth)

The knowledge of Bees was never truly communicated to the World by any but by *English* men; Mr. *Southerne* brake the ice, then followed Master *Levit*, who wrote more than fifty years since: though he was published long after Mr, *Butler*: Mr. *Levit*, I say, not the Father of the publisher, but the Grandfather (perhaps his Grand-child knew not so much) and I question not but Mr *Butler* was acquainted with his Book, for it was in divers mens hands though not printed.

After him Mr. *Butler* wrote singularly wel (although in some things defective, and no question but after Ages may adde more, but I wil not be too bitter, not doubting of the Gentlemans good meaning, but advise him, and all others in this, or any other subject, not to urge Eutopian conceits, but such things

as

as out of experience they have some probable grounds for, *Ne sutor ultra crepidam*, all Countries produce not an equal store of every commodity; that other Countries abound more with Hony, is not because they abound in skil, *Scandia* is more plentiful, because after the great snowes that lye all Winter on the ground, and keep it warme, which once dissolved, the earth is presently embroidered with a garment of Flowers in greater plenty, variety, and continuance than most Countries afford; and the long dayes are another advantage, especially the weather not being so variable as with us, and a principal cause of their increase is the extreame cold in Winter, which holds them in a perpetual sleep, so that they eate little after they leave working, and the earth with the Winters Snow and Raine is thorowly moystned, that drought seldome proves injurious to them, as it is often with us.

But for his conceits of feeding Bees with sweet compositions of divers things besides Hony, because cheaper; we are to know, that although they wil eate of all kinds of sweet things, yet are they not so proper and natural as Hony, neither wil they when they stand in need of feeding extract Hony out of them, as hee supposeth, and repleniſh their Combs, no nor carry at such times Hony which they feed on into their Combs; and when they can doe this, namely, when they are lusty, and the weather warme, they rather gather it abroad (and save your cost and charges) but suppose those compositions were beneficial, yet not to the old Stocks that are likely to miscarry, for they for the most part have already more meat than mouthes, but yet it might preserve the swarmes.

I have shewed a cheaper and safer way, by uniting, and for casual wants, in regard of the continuance of cold and bad weather, Hony is more natural.

And whereas Mr. *Southerne* objects against old Hony, that he wil make them scoure, this is but a fancy, I yearly upon occasions experiment it, but never found that inconvenience.

He objects further, If they be fed, they wil fall to robbing of others, but herein also he was mistaken; Bees that stand in need of feeding are seldome so lusty, never so ventrous to plunder others, but rather in continual danger to be robbed by others of that little they have, which feeding, not duly performed, readily exposeth them unto.

The

The Gentleman in Mr. *Hartlibs* Legacy, desireth to save the poor swarmes by feeding, and with the least charges that might be, whereas not one of six (never so carefully fed) that are desperately poor, can be preserved, and if they doe live and escape the robbers, and not forsake their Hives, which most of them wil doe, finding their numbers small, yet will they not swarme if they live out the Summer, so that the charges besides the trouble will double the profit.

When you have occasion to feed, if you have not reserved Combs on purpose when you took your Bees, spread Hony upon a dry combe, and put it under the Hive in the evening, but remember to take it away in the morning, if any be left, or shut them up until they have eaten all, least the robbing Bees finde it, and not contented therewith, carry away also that little they have in the combes, I would have feeding begun (where it is necessary) before an absolute want, least they bee so poor and weak that they cannot come down; if any happen so to be, then turne up the mouth of the Hive in the heat of the Sun, or near a Fire, and drop a little liquid hony among them.

I have recovered swarmes shut in by long cold weather, where not a Bee hath been able to stirre, and continuing it after with a little hony put under the Hive until the change of the weather, they have done very wel that year.

Bees wil sometimes suck the sweetnes of rotten Pears, sometimes full ripe Grapes, but yet a very few among a great many with us.

Fachellus de reb. Siculis, l. 1. prior. decad. 2. In *Sicilia* there be Grapes of which they make Muskatell, which are therefore called the Bee-grape, because the Bees greedily feed upon them, as also Flies.

Mr. *Butler* counsels, that you cut asunder such Stocks as you intend to preserve (almost even with the Bees) if they have not wrought within a handful of the stoole, and then to set them down, making them a new door, that thus they may be warmer in the winter.

This is a course both wastful and useles, for I never had any stock, if it were supplied with meat, that miscarried, although the Bees had not wrought half way down. And to prevent it, in ordinary years fit your Hives according to the greatnes or smalnes of your swarms; This way, if otherwise profitable, cannot be

be performed without destruction of your Hives, and the loss and trouble of your Bees, and the Stock wil be so small, that except you adde another, and raise it, the swarme wil be worth nothing.

To prevent the cold, daub up the skirts round, and let the entrance be very small.

A watering place near your Bee-garden is very necessary, they cannot subsist without it.

——But near pure Chrystal Springs,
Green mossie Fountaines still your Bee-hives place,
And streams that glide along the verdant grasse. Virgil.

Without it some say, they can neither make their Combes, nor yet their Hony; but the use is not so generall, but when they feed on Bee-bread (which is hot and dry) they cannot bee without it, and they love not to goe farre for it. Columel de re rust. 9 l. c. 5.

Into your running or standing water many prescribe to cast in stones, somewhat elevated above the water:

Into the Poole, whether it stand or flow,
Great stones a cross, and Willow branches throw,
As Bridges for the Bees to stand upon,
And spread their wings against the Summers Sun. Virgil.

But peeces of Wood, or Boards, entred into the water, and set shelving, or leaning towards the North are much better, the stones being too cold in the spring; but if you can bare the banks of the North-side of your Pond of all bushes, and grasse shelving towards the water, where they may drink under the Wind, and in the heat of the Sun, and suck it out of the earth above the water, which they rather desire, than to suck the pure water it self.

But if you have neither Pond, nor River within twenty rodds of your Bee-garden, set water in wooden troughs in your Garden, and have light thin moveable boards, or corks within your troughs, that may rise and fall with the water, let them have small clefts, or many little holes bored through them, that the Bees may stand on the boards and drink; keep Hens and Chick-

ens, especially Ducklings from these troughs, for they will destroy your Bees.

Mr. *Butler* enumerating the several actions of Bees in warme dayes in Winter, among others saith, they drink, but he was deceived, for although sometimes in *January* they gather a little Bee-bread, yet until they plentifully feed of it, they drink not, for while they feed on Nectar which is hot and moyster than Bee-bread, they need it not, but the other being more hot and dry, makes them exceeding thirsty.

Bees will be very much about sinkes, and where greasie water is thrown, nay they rather delight to drink out of Sawpits and holes where the water is thick and troubled, than out of Ponds, though nearer them; and when they water out of Ponds, they delight (as I said) to extract the water from the moystned earth near the Ponds, or Rivers brinkes, than to suck or drink of the purer water it self, which yet some will.

Mr. *Remnant* supposeth, that they suck out of sinker, or old ditches, and places that incline to Salt-peter, for want of salt water, wherewith saith he they season their Hony, which I beleeve not, but rather that they may be more vigorous and lusty, and therefore salt is prescribed to be laid under weak Stocks; hee saith, it is in the defect of Salt water, but where they are near the Salt they use it.

And he further saith, they season their Hony with salt water, and in the want of it, with brackish water thus extracted, therefore he commends the setting of salt water or brine near them; but they neither use salt water about their Hony, nor yet fresh, (as *Columella*) but for the reason before mentioned.

In Summer they wil drink securely upon the Duck-sheard, and other thick weedes in the middle of Ponds; the best time to remove Bees, if you are to carry them farre is in the end of *January*, although if you be necessitated, you may do it well enough presently after *Michaelmas*.

A little before you take them from their standing, lift up a little the skirts of the Hive, and put three or four Tile-sheards under the Verges, that (the Hives standing somewhat above the board) all the Bees may ascend, otherwise some wil be left on the bottome of the stoole, which will be lost; then spread a sheet upon the ground before it, and nimbly take it off, and set it upon

upon the middle of the sheet, and gathering it up round, tye it close above the crown with a noose, tye it also about the middle with a Pack-thred, then put a Cool staffe through the noose (bee sure it bee well tyed) it must hang perpendicular, not swaying one way, or other. Let it bee carried between two to the place whither you intend it, when you come there, set it down, but open it not presently, for the Bees will bee somewhat disturbed with the motion, and ready to flye forth; it is best to set it up in the heat of the day, that if any suddenly flye forth, they may not bee chilled with the cold, but after a little flying about, they may return to it again; but if the weather bee close and still, then set it up in the evening, and stop it up close (leaving breathing holes) untill a faire day, and then open the door.

CHAP. XVII.

Of Bees breathing.

After a long condescension to the capacities of the Vulgar, to whom almost peculiarly this large practical Discourse appertains: I will now endeavour to set an edge upon, if not, to satisfie the appetites of the more judicious, though not with a banquet of Rarities, yet with a dish or two of Sweet-meats (according to promise) as soon as I can provide them.

There is a necessity of refrigeration from without, by aire or water. Now the grand inquiry is, How Insects (in particular Bees) are refrigerated. The Philosophers before *Aristotle*, held that all creatures breathed, as *Democritus*, *Diogenes*, *Anaxagoras*. Arist. de partibus Animal. l. 2. c. 6. Arist. de Spirit.

Pliny professeth that bee accords not with *Aristotle* in this particular, that Fishes breathed not, because they did hear and smell. Plin. Nat. hist. l. 9. c. 7.

I will speak one word to this (although out of my sphere) and but a word, lest I conjure up learned *Scaligers* ghost to oppose mee, That Fishes breath is evident to sense; I have seen them often come up to the top of the water, and a little elevating their heads above, draw it in with the water, and with

many bubbles return it again, some at the Gills, but the greater part at the mouth.

And that they cannot live without aire, thus, In great Frosts they cannot long continue though they have water, except the Ice bee broken, and then they will presently come to the hole for aire, so that sometimes you may take them out with your hands. And if it be some dayes delayed, they will turn up their bellies in the holes as quite spent, yet by the benefit of the aire, many of them recover, but if it bee altogether neglected, in a great Frost most Pond-fish will dye.

Rondel. de pisc lut l. 4. *Rondeletius* holds, That not onely Fishes, but Insects also breath (although without lungs) in particular Bees, because of the sound, and murmure that they make, and because they smell.

Cardan. de subtil. l. 12. *Cardan* affirms, That all living creatures breath either openly or secretly, manifestly such as have lungs, more hiddenly which have gills; and that is most obscure by palpitation, and therefore whereas *Aristotle* denies such creatures that have no lungs to breathe, hee understands thereby a perfect breathing, and therefore saith, The sound of Bees is caused by the aire, which they receive and draw in; why not the same instrument that draws it in return it? But this opinion, although *Aristotle's Scaliger* labours to undermine, but to little purpose. Hee supposeth it to bee caused by the shaking of their wings. This both *Aristotle*, and *Hesychius* before him propounded, but did not conclude of; Mr. *Muffet* saith, It is a secret not to bee determined of. The L. *Verulam* supposeth the humming sound of Bees (which is an unequal buzzing) to bee from the motion of their wings, because it is not heard, but when they stir, I deny not but the sound is more shrill and audible thereby, but not onely caused therewith.

I. Verul. silva-silv. ar. cent. 2. 175.

First, because in a Hive full of Bees, where they lye crowded up thick together in the Winter between the combs, without room to dilate their wings, not at all to shake them, you shall have a sudden smart sound in an instant from the place touched, descending to the bottome from all the Bees, as it were complaining.

Secondly, by the incouragement of the Queen Bee, when two swarms are united, and so mingled together, that either of them

them being encompaſſed with their whole troop, and having no room to ſtir, and ſhake their wings (being each of them in the center of their regiment) but as they are in the conflict moved with the whole body; yet may they bee heard audibly ſometimes a rod from the Hive a great while together, without intermiſſion, each encouraging her army to ſtand to her, and for her.

Thirdly, If their ſound were cauſed by the agitation of their wings only, it could not bee various and changed, but onely ſmaller, or greater, but both *Ariſtotle* and *Scaliger* acknowledge, that they change their voyce; and if they did not, yet is it ſo evident to ſenſe, that but comiag among them, by their different voyces, it may bee known whether they mourn or rejoyce, work or fight. Ariſt de hiſt. l. 9. c 40.

Fourthly, If their ſound were cauſed by the agitation of their wings, then according to the largeneſs of their wings ſhould bee the greatneſs of their ſound, but this is not ſo; the Queen Bees wings are no bigger than a common Bees, but her ſound is more than ten times lowder and greater.

I might adde that Crickets ſing, and their voyces are heard very far, and yet have no wings to ſhake; nay they move not their bodies when they ſing, as I have often obſerved, and as ſoon as they ſtir, they give over ſinging.

In a word, as to a Muſician that playes on a Flute, or ſuch like Wind-inſtrument, there is required skilfulneſs in the outward touch of his inſtrument, and alſo wind to bee inſpired, without which hee cannot poſſibly ſtrike the ear, or pleaſe the ſenſe with any melodious noiſe, ſo do I conceive in ſome reſpects the humming noiſe of the Bees, is cauſed both by the outward motion of their wings, and alſo by an inward motion, that I ſay, not inſpiration.

Ariſtotle was very wavering what to determine concerning their ſound, ſometimes hee ſaith, they make a noiſe; ſometimes, hee grants they have a voice, and hee hath no ſooner granted it, but would fain bite it in again if hee could, as overthrowing this poſition, that they breathe not; Hear what hee ſaith, they change their voyce, when they ſwarm they have a proper and peculiar voyce, but whether they have a voyce or not, is not yet throughly underſtood in regard of the difficulty. Ariſt. de hiſt. l. 9. c. 40.

Thus is this grand Philosopher unresolved, it is a difficulty, hee cannot tell what to determine; but hee hath taken up another opinion, and although hee bee somewhat convinced of the vanity of it, yet hee is loath to retract, hee will rather set his wit upon the Tenters, and feign some new distinction, sometimes they make a sound, sometimes they have a voyce.

Arist de Spirat. Small and blood-less creatures are externally cooled by the ambient aire, or water, neither is it necessary that the air should penetrate them, because of the weakness of their natural heat; but the coldest creatures need refrigeration, for they have a heart, as the Snail, which is visible to all men upon dissection, and much more hot creatures, as Bees are, which have also a heart, although it bee not easily discerned by prejudicate eyes.

Arist. de Somno & Vigil. Winged creatures when they move themselves by the attrition of the aire sliding into their belly, make a noise.

Arist. de hist. l. 4 c. 7. And again, Insects have no voyce, but make a sound onely by the admission of the aire, not emission, and Bees, and all other Insects lift themselves up with their wings, and presently contract themselves when there is made a sound by the attrition of the aire taken in, but not constant to himself, hee saith in another

Arist. de Spirat. place, There is an innate implanted aire in the transverse inclosure, which being lifted up, and contracted, causeth thereby a smiting on the little membrane, and hence saith hee is their sound.

Scalig. com. in Arist. de hist. l. 4 c. 7. *Scaliger* saith, It is from a membrane including the aire, and the motion of the external members.

Magirus Physiol. *Magirus* saith, Their noise is not made by a return of the aire, but by an agitation of an inward not outward aire.

L. Verul. Silva Sil. cent. 2. 133 Another supposeth sounds, and therefore voyces may bee made without aire. It is certain, saith hee, howsoever it crosse the received opinion, that sounds bee created without aire, though aire bee the most favourable deferent of sounds. Take a vessel of water, and knap a pair of tongs some depth within the water, and you shall hear the sound of the tongs well enough, and not much diminished, and yet there is no aire at all present. What if I should say there is aire in the water, because there is in it a sound made?

Arist. de Spirat. Hot creatures as Bees, desire a greater refrigeration: Bees like

like to those creatures that breathe, do make a sound (*spiritu*) with the aire or spirit, for when the native, which is (as before) implanted in the transverse enclosure, is lifted up and contracted, then is caused an attrition of the membrane; For they do not otherwise move this part, then other Animals draw aire with their lungs from without, and Fishes by the agitation of their Gills.

Scaliger is for transpiration; and so *Basil*, hee saith, That Insects breathe not, being without lungs, but were nourished by aire in the external parts, and his reason is, if they bee dipt or smeared with oyl, they presently dye, the passages or pores being stopt, but yet saith hee, If they bee presently washed with water (others say Vinegar) the passages being opened, they will live; and with him accord divers others. Basil Hexam. Homil. 8. Alexand. Aphrodis. l. 1. Problem. 62.

To this I answer, That it is granted that oyl kills Bees, and almost all other Insects being naturally mortal to them, and wash them after with what you will they will, neither revive, nor recover, but almost as suddenly dye (though but a part of their body bee smeared with oyl) as if they were cast on hot embers. And that it is not, because of the stopping of the passages of the aire, appears thus: Let Bees bee drowned in honey, which is more viscous and clammy than oyl, yet if they bee timely taken out, they will dry themselves, or bee suckt dry by their fellows, and recover.

Now at last you cannot but take notice how various they are in their opinions, that deny breathing to Bees, or so to make a noise, they cannot but acknowledge a necessity of refrigeration.

Aristotle sometimes by the admission, not emission of aire; sometimes by a native implanted aire.

Scaliger from a membrane including the aire, and the motion of the external members.

Magirus by an agitation of an inward aire onely, but whether native, or adventitious, hee expresseth not.

L. Verulam sometimes, that a sound may bee made without aire, sometimes by the motion of their winge.

Basil that they are cooled by transpiration, and therefore by aire so admitted, must make their noise. Thus wilfully deviating from, and denying a truth, they are quickly be-wildred in a thicket of errors.

Now

Now let us hear their arguments why they suppose them not to breath, *Aldrovandus* saith, Insects, neither breathe, nor need breathing, because a breathing faculty is bestowed on creatures which have lungs, but Insects being blood-less are cold, and therefore want not refrigeration, but are sufficiently cooled by a native aire, or externally by transpiration; I answer many of them (if any) are not blood-less, for they have a heart which the Philosopher accounts the original of blood. And if they have a heart (*Aldrovand.* acknowledgeth) they have lungs also, and stand in need of great refrigeration. And that Bees are hot creatures, *Aristotle* affirms.

Aldrovand. prolegom. in lib. de insectis.

Arist. de Spir.

Secondly, If they breathed, as they drew in breath, they must also return it, which could not bee done but by some inward instrument; but all Insects are without bowels (according to *Aristotle*) but this is manifestly untrue; dissect a large Grashopper, the bowels are visible to him that hath but half an eye; and so also in Humble-bees, and in many other Insects.

In some that are very small, they are not distinctly visible; but it follows not therefore that they are without them, no more than because they want the visible organs of hearing and smelling, that therefore they neither hear, nor smell; both which senses almost all natures secretaries acknowledge to bee in them. And yet who is able to point out the instruments. *Aldrovand.* hath some other reason, but all built on the former foundation which miscarrying, they must needs go to the ground.

Scal. de subtil. exercitat. 173.

Scaliger his main argument that they breathe not, is, because they need not a refrigeration of their heat having no heart; but this being manifest to sense, as learned Dr. *Harvey* avers, the argument falls to the ground.

Others deny that Insects breathe, and their reason is, because there is no breathing knot, or turning in the inward intrall, that is to say a membrane like to the lungs, whereby the aire is drawn in, and therefore some hold that they live as plants; but there is a great difference whether any thing breathes or lives. Others convinced of the vanity of this conceit, hold that they have something analogous, namely by transpiration.

Arist. de Spir.

Aristotle saith Bees breathe not, because they continue long in the water. But not long under the water; so long as by beating with their wings, they keep their heads out, they fe-

fer-

ſerve themſelves; but their wings being once thorough wet, they quickly drown.

And that they receive water into their bodies, appears, becauſe when they dye ſuffocated in the water, they are greater than when they are alive, whereas if they dye otherwiſe, they ſhrink up, and are leſs.

Ariſtotle, and alſo *Scaliger*, adde another reaſon, they will, covered with aſhes revive, perhaps if they have not been long drowned, with heat they will recover, as they will if they bee chilled near twenty hours, but aſhes are ſo far from reviving of them, that if they bee alive and luſty, they would rather kill them; for duſt (much more aſhes) will, if they go a little upon it, ſo fur their dew-clawed feet, that it will indiſpoſe them to flye. Idem de Spſ-rat.

Breathing, ſaith *Scaliger* is ſeen by motion, or perceived by touch, by the pulſe, or underſtood by the voyce, and all theſe wayes more or leſs, may it appear that Bees breathe. Scalig. de ſubtil. exercitat. 273.

But it may bee objected, that they have no noſtrils to receive breath by.

I anſwer, They breathe by their mouth, *Ariſtotle* ſaith, the mouth is for many uſes, for divers creaturts do breathe with it. For breathing is not a proper work of the noſtrils, but creatures breathe partly by the noſtrils, partly by the mouth. Ariſt. de partibus Animal. l. 3 c. 1. Ariſt de Spir.

But it is further objected, wee ſee no lungs: I anſwer, in fowls the lungs are ſmall, and but like a membrane, ſurely then in ſuch ſmall flying creatures as Bees, they are not viſible.

But to conclude they have no lungs, becauſe wee ſee none, were but a weak arguing. In ſome creatures denied to breathe, we ſee them, and perhaps with a good multiplying glaſs, might ſee in theſe; by the ſame reaſon wee might deny they hear or ſmell, becauſe wee ſee no organs (as before) whereby they perform it, and yet nothing is more certain. Ariſt. de partibus Animal. l. 4. c. 6.

That Bees breathe, Mr. *Butler* affirms, but it was a queſtion hee diſputed not, but relating how after they have been dead a whole day (being chilled with cold) although, ſaith hee, they be quite dead, without ſenſe, motion, and breath, you may, if you bee diſpoſed, revive them with the warmth of your hand, but look to your ſelves, for many when they begin to revive, will ingratefully ſting.) And this their reviving cannot but almoſt Butler Fem. Mon. c. 7.

moſt ſeem a miracle unto you, for preſently their ſpirits returning, you ſhall ſee them begin to pant and breathe, and anon they will flye away as luſty as the beſt.

But to come to arguments, That Bees breathe is evident by their panting and palpitation; I mean not when they are in the condition of priſoners, and violently held or detained, for with *Scaliger* I acknowledge, that Bees or flyes captivated, palpitation is not breathing, but a ſtriving to eſcape.

Bees when they return from their work are often ſo weary (as men out of breath) that they are neceſſitated to reſt themſelves near the Hive, untill they have recollected their ſpirits, and gotten, by a little reſt, new ſtrength, at firſt panting more quick and ſhort, but by and by fetching as it were a longer breath, until at laſt they pant little, if at all.

Secondly, It appears by their ſweating at the Hive-door, a moiſt vapour is viſible at the door of a good Hive in the morning, ſometimes in drops of water. As Bears in *Ruſſia*, while they ſleep in Winter, yet are found by the Hunters, by the diſſolved ſnow turned into iſycles on the boughs of the trees under which they lye, cauſed by their continued breathing.

Thirdly, becauſe if a full Hive bee cloſe ſhut up that no aire enters, they will quickly bee ſuffocated and dye; whereas indeed if there be but few Bees, they will continue the longer encloſed, a circum-ambient aire in the mean time refrigerating, and cooling them.

Ariſt de Spirat. Fourthly, if you ſtop their throats, *Ariſtotle* acknowledgeth they will bee ſtrangled.

Fifthly, when they are chilled with cold, lay them in the warm Sun, or near a fire, or if you dare venture, hold them in your hand, and you ſhall ſee them begin firſt a little to ſtir, then to pant, and the longer more ſtrongly, untill they remit it by degrees as they recover life.

But I trifle out the time to prove by arguments to the ear, a thing ſo viſible to the eye. Hold your hand near to the mouth of a full Hive, and that in the night when they are ſuppoſed to ſleep, and not to ſtir, and you ſhall feel a cool aire come from them. Nay hold a feather, and you ſhall ſee it ſtir to and fro, as if it would be blown away.

Some

Some affirm, that insects have no blood, because they have no heart nor liver. *Pliny* was of opinion, that though they had no blood, yet somewhat analogous or equivalent, for whatsoever is the vital humor is its blood. Learned Doctor *Harvy* in his anatomical lectures, openly affirmed, that Bees have a heart, (I heard him) which also hee hath since published, although Dr. *Primrose* will scarce acknowledge it, pretending his weak eye-sight, but this being asserted and confirmed by such undeniable experience, I readily subscribe they have a heart, and therefore a liver, and therefore blood, for the heart is the fountain of blood, and hath first blood, and Creatures which have blood have a liver.

Dr Har. exercitat. anatom.

Arist. de gener. idem de partib. ani l. 3. c. 4.

Aldrovandus citing *Aristotle* saith, all creatures have both a heart and also a liver, one for the Original of heat, and the other for the concocting of their meat, And again citing *Aristotle de partibus animalium* lib. 3. hee hath these words, *corde carens nullum animal unquam ortum est.* No Creature was ever produced without a heart: and there is good reason for this assertion, seeing the heart in *Aristotles* judgement is the Original of life, heat, blood, sense, and motion, and nature doth suppeditate breathing or refrigeration for the benefit or cooling of the heat in the heart.

Aldrov. prolegom. in lib. de insects.

All Creatures which have blood have a heart, and why not, all Creatures which have a heart have blood? but in little creatures the blood is so ob cure, that it cannot bee seen as in greater, but onely in the heart (not alwaies there) because of the thinnesse of the blood and the veins, are so little and small, that they can scarce if at all bee perceived, but the heart is the beginning of the veins, and the Original, and fountain of blood, and (as hee saith) the beginning of sense, for living creatures have the beginning of sense, where they have the beginning of motion.

Arist. de hist. animal. lib. 3 c. 10.

Arist. de somno et Vigil.

But yet notwithstanding all this, the liver and the heart is so farre from being the author and fountain of blood (which yet *Aristotle*, and all Physitians affirm) that the contrary plainly appears in the fabrick of the Chicken in the egg, namely, that the blood is the mother of the heart and the liver, which Physitians seem to confesse unawares, when they determine the Parenchyma of the Liver to bee a certain flowing of blood, as if nothing

Dr. Har. de generat. animal. exercitat. 50.

Idem in eod. lib. exercitat. 19

else were there but coagulated blood, and that the heart (saith hee) is not the author of blood, appears, because his substance or parenchyma is produced, sometimes after the blood, and is superadded to the beating vesicles.

Now seeing it is so apparent that Bees have a heart, then it must follow necessarily, that they must have lungs also (which *Aldrovandus* grants) that these receiving and returning aire may refrigerate the heart, now the lungs receive the Original of their motion from the heart, and with his fulnesse and emptinesse as it is contracted and enlarged, makes way for the egresse or ingresse of air, when it is lifted up, the air comes in, and when it is contracted it goeth forth.

Arist. de Spirat.

That some insects have lungs, *Aristotle* doth implicitely grant, for hee saith, *pulmones habent quæ in lucem fœtum jam conceptum proferunt*, such creatures have lungs which bring forth a living creature conceived in them. Now that some insects do so, is undeniable. *Scaliger* affirms it of a certain sort of flie, of

Scalig. de subtil. exercitat. 191

which wee spake before, and it shall bee further confirmed by a discourse of the claw-tailed humble Bee, when wee speak of Humble Bees.

CHAP. XVIII.

Of Bees temperature, Sleep, &c.

Nicolaus Leonicenus quæstion. natural. 43

Aristotle affirms most insects to bee of a cold temper, his reason is, because they breathe not, and to this N. *Leonicius* subscribes, and saith all insects need little food, because they have small bodies, and therefore are satisfied with little, or rather saith hee, because they are cold and bloodlesse, now creatures which are hot, desire much refreshing, and quickly digest what they eat. So *Aldrovand.* Insects are sufficed with little meat, not so much for their smalnesse as their coldnesse. That this may bee true of some I will not deny, but not of Bees, they are hot creatures, and desire much refreshing, and quickly digest what they eat. Indeed they are very liberal feeders; whosoever shall observe the abundance of Bee-bread that is daily brought into a good hive, which they spend almost as fast as they

Aldrovan. prolegom in lib. de insectis.

Aristo. de Spirat.

they get (besides honey) and also considers, how much they eat abroad when they gather, cannot but acknowledge that they are great eaters. And *Aldrovandus* upon experience affirms, that many insects are hot, and Bees in particular, and his reason is, because they grieve and violently pain those that they sting. Insects have been noted by the Ancients to feed little, but this hath not been diligently observed, for Grashoppers eat up the green of whole Countries, and silk-worms devour leafs swiftly, and Bees eat in great quantity according to their bodies; which is evident to any that shall observe, what store they carry daily into their Hives, and what little increase there is sometimes, after three months laborious constant working.

L. Verul. Silva. Sil cent. 7. 697.

It is true, that creatures that sleep and rest much, eate little in those times as Bats, Dormice, and Bees, But saith *Cardan* it is necessary, that Creatures that sleep much, feed much, and by the vertue of the meat formerly eaten in abundance, subsist when they sleep.

Card. de Subtil. lib. 9.

All creatures almost, more or less sleep, yea insects sleep *somno tamen brevi utuntur*, but they sleep but a little saith *Aristotle*, surely if at all a great deal, the brain, is chiefly the cause of sleep, and such creatures as have not a brain sleep not. Bees sleep saith *Aristotle*, and hee proves it because they are quiet, as hee saith, all night and make no noise, and they cease not from motion, because they are weak sighted and not able to move, bring a light they stir not, saith hee, but this is false, for they will flye after and into a Candle, or light, like a moth, and burn themselves, but suppose they did not stirre with a light, yet were the argument of no force, they stir not at a light, and therefore sleep, for wee know that many fowls are taken in the night with a light, at which they stir not, although they bee awake, because they see nothing beyond or beside the light.

Arist. de Somno et Vigil.

Arist. de somno. Idem in eodem. Plin. nat. hist. l. 11 c. 3. Arist. de Hist. l. 4. c. 10

That they sleep from the beginning of winter to the rising of of *Arcturus* sixty daies together, and eat nothing at all as *Pliny* affirms, is not true with us, perhaps in Northern Countries, where the cold is more intense, they feed little, and sleep for a longer space, which is a principall reason of their so great plenty of Hony. The more temperate winters with us, occasion if there be not the larger provision, a great decay of Bees. For every warm

warm and sun-shine day, they will flye abroad, and play, and empty themselves, and thereby getting good stomacks return home and feed: whereas gloomy cold and close weather, shuts them in and saves stover, and therefore a smaller proportion will sufficiently supply them untill the gathering season.

That they sleep when they are abroad out of their Hives (on their backs) is a ridiculous fable, least the dew should wet or prejudice their wings, and hinder their flight when they awake, as *Aldrovandus*, and other deliver from the Ancients. And suppose that they should observe this course, yet could they not accomplish their purpose, for from the vapour arising from the earth their wings would bee as much if not more wet, then if they should rest on their feet: howsoever their wings being slimy and (as it were) unctuous, the wet would not much stay upon them.

Aldrov. de insect. lib. 1

Concerning the age of Bees, diverse have been the opinions, some giving them a longer, some a shorter life, *Aristotle* saith, they live six or seven years at the most. *Pliny*, that they never exceed ten, no not by succession. *Columella* also saith the same, *Carda e* saith; strong Bees may continue twelve years. Mr. *Remnant* saith, if they continue in health three years, they may stand twenty, *Mouffet* supposeth, that if they be well cared for, and cured of their distempers, they may live thirty years, and tells us that at *Hanworth*, hee knew a stock continued in the seeling of the house of the Dutchesse of *Somerset* more than three decads of years, and swarmed four times almost every year and therefore doubts with *Albertus* whether they ever dye of age.

Arist. de hist. anim. l. 5. c. 12
Plin l. 9. c 3.
Cardan de variet. rerum. c. 28.
Mouset. theat. insect. l. 1. c. 3.

The truth is, notwithstanding these mens opinions, that Bees live but a year and a quarter at the most, for those Bees that seem in *May* lusty, full, brown, smooth, well winged, will by the end of *July* following begin to wither, become lesse, look gray, and have their wings tattered and torn, and bee all dead before the end of *August*. And although their life seem short, yet is it more then double to the Droans, but by succession they may continue many years.

Now what is to bee said concerning the life of the Queen Bee, it is a quere never propounded by any (for ought I know) for most

most men concluding that the Bees live many years, have supposed the Queen Bee to continue as long, and her life to bee of an equal extent and date with theirs. Mr. *Butler* that first publisshed the Bees to bee birds of a years continuance, and somewhat more, yet started not this scruple,

It is well known, that some Hives continue ten, nay twenty years, and more, what shall we suppose of the Queen Bee, doth shee survive ten, nay twenty generations; or how comes there a succession of Rulers? I have propounded a question, wherein I shall scarce satisfie my self, it is not strange therefore, if I leave others unresolved.

It is manifest that the Hony Bees are but yearly creatures, and the reason of their short life is their unwearied labours, by daily flying abroad, incessant working, and ponderous burdens, they waste themselves, and wear their wings, which could they renew as the Eagle her bill, they might for ought I know live many years. Now the Queen Bee not working at all, seldome flying abroad, and then not far, not so much in a year, as a Hony Bee in an hour, never tears her wings, wastes her strength, nor makes her self old with labour, so that it is more then probable, that she may live many years.

Otherwise you must suppose her miscarriage ordinarily to be, when her Infants are in their prime, and not departed from her, the elder being able, and ready to succeed her, for if she should miscarry at other times before their birth, or after their Butchery, the whole stock must needs miscarry.

CHAP. XIX.

Of Bees fighting and robbing.

BEes when they are abroad at their work, or remote from their Hives and common treasure, are very gentle and peaceable, so that in their private wrongs, how ever you use them, they will not resist, if by any means they can get away, sometimes at their waterings they will contest one with another, but are quickly quieted, and parted, whereas at their Hives they are fierce and furious, they will neither give nor take quarter. Aristot. de hist. lib. 9. c. 40.

Upon

Upon the union of two swarms, sometimes (but it is rare) there is at first, especially if the companies bee somewhat equal, a violent charging each of other, and the Leaders (for other extraordinary Trumpeters have they none) with a shrill and loud noise animate and encourage their several companies boldly to stand to it, and not without cause, for it is their safety, or destruction that all the conflict is for, and as soon as they conclude who shall govern, which for the most part is determined in few hours, then they will all cheerfully as one body, live and love together.

Aristotle writes of certain Serpents in *Mesopotamia* which do great mischief to strangers, but do no hurt at all to the inhabitants: And Mr. *Herbert* tells us, *Cashan* in *Parthia*, is much infested with Scorpions, but a finger long, but of great terror in the sting, inflaming, such they prick with their invenomed arrow so highly, that some dye, none avoid madness a whole day, but which is remarkable, they never hurt a stranger; but Bees irritated near their Hives, are at equal enmity with strangers, and domesticks; such as are daily conversant with them, if they bee but a little provoked, shall finde no favour, so that no creature is so violent and revengefull; but although their spight and malice in their rage is as much to men and beasts, as to their own kinde, yet seldome do they work an equal hurt and mischief; and indeed the opposition is bittereſt between those that are neareſt, for there is a special implacable hatred.

Mr. Herbert.

Avicen.

When two swarms settle together, and eagerly bid defiance each to other (this falls out seldome, yet sometimes) alwayes expect a martial and deadly skirmish.

When a company with their Leader forsake their own Hive, and enter into another, their difference is irreconcileable, their hostility unappeaseable, but by the death of one of the Commanders; for things that are in their nature contrary, can never be reconciled, as two Commanders in a Hive.

And grapling so in clusters head-long fall
Hail from the Winters sky falls not so fast,
Nor shaken Oaks so thick do shed their mast.

Virgil.

I had once two large swarms, that rose almost immediately one

one after the other, and before the first were fully settled, the last came and se led with them; and began p.esen ly to kill each other most desperately. As soon as I had notice of it, I caused them to bee hived that were yet alive, half being slain in little more then a quarter of an hour; but the remainder being hived, yet ceased not their quarrel (although I threw strong drink upon them, and did what I could to appease them) yet they still continued the battel, that before night there was not above a pinte left.

But although two companies upon their congress and coming together with equal forces bee thus desperately cruel; yet when they rob, and plunder, they shew less rage and ferity, but are not less mischievous and hurtful.

Bees are the most dangerous enemies to Bees, they have many other, but none so hurtfull.

Some are too favourable in their censures, and clear them from robbery. Bees, saith *Aristotle*, hunt after nothing, but labouring painfully, gather all they possess. And *Scaliger* gives a reason for it, because they feed not on flesh, nor hunt abroad to plunder other, and therefore expect a reciprocal carriage from others; but by his leave, no greater robbers of Bees, than Bees, so that though hee return an *Ignoramus* to this bill of robbery put up against them, yet upon better evidence I must finde it.

Arist. de hist. Animal. l 9. c 64.

Scalig. com. in loc.

The greatest danger that befalls the Bees, comes where it should least come, from the Bees themselves. Bees are loving and sociable creatures, and therefore wee might think should converse one with another in love and peace; but instead of support and protection, they do finde ruine and destruction from their own kinde.

Pliny saith, when their provision fails, they invade their neighbours and rob them; they fight not then for their right, but to get a booty, and under colour of warring, make a trade of robbing. And another saith, When they want meat, they forcibly rob their neighbours: but the matter is quite otherwise, for usually the lustiest, and the best stored, that need nothing, will bee first prying into their poor neighbours weakness. They set not upon an empty Hive, seldome upon an ill furnished Hive, but upon some well provided stock, where the fatness of the booty is a fitness to their desires.

Lilii Greg. Gyrald. c. 1.

Remisse opposition provokes fiercer attempts, they are impudent when they meet not with bold resistance, only resolution can make them give back, give over, they will make many tedious and stinkless onsets, as if the strongest fort were not able long to hold out.

They first come with a few and make an assault, and by the opposition conclude the issue, but still renew their numbers, and although they loose many in the conflict, yet will they persist, and not prevailing that day, will the next morning before the true Bees bee stirring, venture in, and if the opposition be not the more resolutely maintained, they will come so numerously, as waters at a breach, that resistance is to no purpose, and then they do fall to plundering, going and returning untill it bee dark, if they have not carried away all before; and so continue till they leave not a drop of honey; to whom often the true Bees (seeing their condition otherwise desperate) will joyn themselves, and accompany them to their Hives, and help to carry away their own goods.

As long as the opposition lasts, they are very fierce, and untill they have overcome, merciless, but having once made a forcible entry, they quickly give over killing, and fall to plundering.

Sometimes many stocks will bee up in arms together, and then it is no easy matter to compose and quiet them.

Wouldst thou this fight and furious heat allay;
Virgil. *A little dust thrown up will part the fray*

Yet this often avails little, it is better by prevention to avoid it, by narrowing their doors when once mid-*July* is past, that but a Bee or two may enter at once (understand it of the poorer stocks) but if this hath been neglected, and they bee together by the ears, then make a smoak of mulch and wet straw, and threw water about the Hive door where the greater conflict is, straitning the passages of those that are robbed sometimes (if the skirmish bee violent) stopping them up close, and throw water upon those that eagerly seek to enter, and in less than an hour finding no entrance, and trouble without, they will return home. After sunset open them, and all the robbers that are

are alive will go to their own Hives. Examine their state after the robbers departure, and if you finde but a few Bees, it will not bee worth your labour to trouble your self for their preservation, for at one time or other they will bee robbed, if not, they will never thrive.

But if there bee a considerable quantity of honey still left, and also of Bees, then stop them up again close, allowing them aire through a quil; but bee sure you stop them up very well, for in the day time they will bee gnawing and mineing to make a hole out, and the robbing Bees will bee ever and anon visiting the door, to see if it bee open, which if they finde (if you do not presently stop them in again) the last danger will be worse then the first. After sun-set allow them a passage to go forth, to take the air and empty themselves; take this course seven or eight daies, and when you give them a free passage in the day, let it not bee untill nine of the clock, and the first and second day that you open them, stop up their enemies, that they may not trouble them who are not lusty, as at the first by shutting in, and in eight days their enemies will forget them,

Some prescribe to cast flour on the Bees that you let out, that so you may know the plundering Hives, which you may easily otherwise, but if you do not, take this course, and observe whither they go, when you once know the robbing stock, with a long pen-knife, through the Hive, cut the combs towards the top, that so they may find work at home to stop up what you have broken.

Although they will not admit of strange Bees in their Hives, yet diverse stocks will conspire together, and agree well to undo their neighbours: and usually like the fox they prey furthest from home, seldome robbing their next neighbours.

The chief times of robbing are Autumn and the Spring: usually about the end of *August*, but in dry years, about a fortnight before, when the honey gathering is almost over, then do the lustiest (being most numerous in Bees) practise it on the old stocks, such chiefly that have overswarmed, and have but a few Bees left: on such also as have lost their Leaders, who are careless to resist, and will quickly go along with them, and help to carry their own goods. There is no way to save such, but as I prescribed formerly.

Another time of robbing is in the spring, and then those poor old stocks that escaped in Autumn must bee carefully watched, poor swarms also shall now bee tried, until the year grows up, and the flowers bee plentiful.

Let all such have (as I ordered before) very narrow doors; swarms are more difficultly prevailed against then old stocks; for though perhaps they have not wrought down to the board, and so the entrance be more easy, yet being usually more multitudinous, they will hold out longer: whereas old stocks although they have more provision, yet have fewer souldiers, and therefore are quickly overcome and plundered, and more easily in the spring then before.

Once, if you perceive that waspes in multitudes, or robbing Bees have made a breach into an old stock, delay no longer, but take them, for although by your circumspect care in stopping them up and narrowing their entrance, you may prevent their present destruction, yet will they not escape in the spring: but if it bee a swarm, there is some hope, that by your care, you may prevent their present and future destruction.

CHAP. XX.

Of Bees, Enemies and Sicknesses.

ALl Common-wealths are infested with enemies, and the Common-wealth of Bees as much as any other. Wee have already spoken of the worst, namely Bees.

In the next place let us treat of Mice, which are also very hurtful and destructive. Sometimes they get in at the door, when it is left too large and open, sometimes they make their way through the Hive, most commonly near the crown of it, and they are no sooner in, but they presently share down the Combs, and eat the honey; and if they be let alone, will often make their nests among the Combs. To prevent them, bee carefull of the door; oft-er, especially in the winter, view your Hives. If you see any crumbles of wax at the door, bee sure there is something amiss, look therefore warily, and keep traps baited about your stalls.

Waspes

Waſpes in Harveſt do great miſchief, ſometimes deſtroy whole ſtalls. At firſt when they are new come, they content themſelves with dead Bees; but after a while they grow bolder, and venture into the Hives, and moſt of all in the cool mornings when the Bees ſtir not. And after they have found the way they will never give over, but invite their fellows, nay, they are often the robbing Bees harbingers, who make an end uſually where they beginne. And although there bee an antypathy between them and Bees, yet will they readily joyn together to plunder the poor Hives. They are naturally hardier and ſtronger than Bees, one waſpe will often violently break away from two or three Bees, yet many of them come ſhort home, being ſlain in the Hives by them.

In the ſpring at your watering troughs, or other places where your Bees drink, and on the ſouth-ſide of your pales, you may ſee the mother Waſpes, drinking or gathering, kill them if you can, and know that you deſtroy as many neſts as waſpes, for every mother Waſpe makes a neſt. After when they have bred let their neſts bee ſought out, and deſtroyed, burn them or ſcald them; or (which is ſooner done) in the evening with an iron ſpade (having before obſerved which way they go) ſeek for their neſt by putting it into the ground, and you ſhall know when you meet with it by the hollowneſſe, then looſen the earth round and ſtamp it in. Set glaſſes with ſtrong worte, ſweetned water, or ſweet fruit: or rather pots covered with a paper, with a hole in the middle, and that is the beſt way, for in the other the Bees will be often drowned.

The Hornet is as hardly cenſured as the waſpe, but ſhee is nothing ſo dangerous; ſhee now and then eats a Bee, but the waſpes deſtroy whole Hives, her manner is to flye about the Hive, and when ſhee ſeeth a Bee reſting her ſelf upon the ſtool, ſhee preſently ſeizeth upon her, and carries her away in her feet, as the Hawk doth a bird. Deſtroy their neſts if you can without danger, if it be no large hole, in the evening having made a woodden plugge, ſuddenly knock it in, and you are ſure of them, or ſet lime twiggs before their holes, and thereby you will much diminiſh their numbers.

The Titmouſe is more hurtful then the Hornet, I mean the great Titmouſe called a Colmouſe, with a black head, for ſhee

will eate ten or twelve Bees at a time, and by and by be ready for more; she feeds her young ones also with them. She eates not the whole Bee, but divides it in the middle, and pulls out the bagge of hony with the entral, letting drop the skinny outside.

When she comes to the hive and findes none, she knocks with her bill at the door, and as soon as the Bees come out to enquire the cause, she catcheth first one, and then another, until her belly be full; in the Spring she watcheth for them in the Willow and Sallow Trees, and takes them when they are at their work. Destroy their Nests in breeding time, and shoot them in Winter.

The Spider is a great devourer of Bees, if the Hives be empty, or have but a few Bees, shee will make her web within: but for the most part if it bee a penthouse, she lies between the boards where they fold one over another in the day. And in the night shee weaves her nets right before the Hive, wherein the Bees are quickly ensnared.

Virgil. ——— *Close*
About the door her net-like cobwebs lose
The Pallas hated Spider Spins.

Kill the Spiders if you can come at them, and in the mowings beat down their nets. Many also spread them in the flowers, and among the brambles in the hedges, and they lye in ambush in the cod or center of them out of sight, and no sooner doth a Bee or flye strike them, but they run upon them and kill them. They will grow quickly greater then large Pease by eating of Bees.

The Woodpecker is by many indited, I think not much guilty, yet I will not discharge her.

The Swallow hath an ill-name, but I could never observe any great hurt done by them.

Chaucer assembly of Fowles. *The Swallow murdresse of the Bees small,*
That maken hony of flowers fresh of hue.

The

The Moth with her mealineſſe ſomewhat offends the Bees, but except the Hive hath very few Bees, or be altogether empty, ſhe doth no great hurt; yet then ſhe will lay her blots in the Combs, which will ſpoil and conſume them all. Ordinarily ſhee breeds her young by the heat of the Bees under the skirts of the Hive, and the dawbing ſnails will ſometimes creep into the Hives, and much trouble the Bees with their coldneſſe and ſlimineſſe.

The Toad is thought to bee dangerous, though ſhee doth but lye under the ſtool, and ſometimes to deſtroy them, as the Frog when they drink, but I never obſerved it.

The Piſ-mires are often very hurtful, troubling the Bees, and devouring their hony, ſcald them in their neſts, and tarr the places where they uſe to aſcend. *Albert.* ſaith, mountain *Origanum* dried and beaten to powder, if it be ſtrowed on their neſts, makes them to forſake them. Albert. de mirab. mund.

If the Ants holes be ſtopt with *Heliotropium*; they wil certainly dye. Mizald arcanorum l. 1.

Bears in ſome Countries do greatly endamage the Bees, and Bats, thoſe that breed in trees, ſeldome are injurious to thoſe in Hives.

Sparrows feed on Drones, but meddle not with the Bees. At firſt I was ſuſpicious that they deſtroyed the Bees; taking notice therefore of their often flying to the Hives, and from thence to their neſts; I cauſed the young to bee taken, and found their crops full only of Drones.

Ferrets delight in honey, and therefore ſpoil Bees, but this *Scaliger* denies, for hee ſaith, that he hath offered them honey, but they refuſed to taſte it. Ariſt. de hist. lib. 9 c. 9. Scal. com. in loc.

In *Guinea* are many Bees, but all wild, breeding in trees, and receive much hurt from a kinde of great black Ant, which make holes in the earth like field Mice, and much damnify the Bees by eating both hony and wax. Pur. Pilg. 2 part l. 8 c. 2.

In the Countrey of *Sofala*, there is a bird called by the Cafers *Sazu*. It is of the bigneſſe of a Linnet, and almoſt of the ſame colour, with a long Bill. The chief food of theſe Birds is wax. They ſeek about the woods for ſtocks of Bees: And when they have found one that hath honey, they Joan. dos Santos Itinero pin. da Ethiop. oriental c. 24.

they come into the waies to seek for Passengers to shew it them; which they do by crying before them, and beating their wings from bough to bough untill they come to the Bees. The naturals who are acquainted with their manners, presently follow them, to get the honey. And the advantage that these birds get is to eat the wax they leave, and the dead Bees. They will come into Churches at the windows, and if they find wax candles, eat them.

Purchas Pilg. fourth part, l. 7. c. 1

The Hirara is like the Civet-cat (though some say it is not) they are of many colours, *viz.* gray, black, and white, They eat nothing but honey. And in this they are so terrible, that let the hole of the Bee-hive bee never so little, they make it so big that they may get in, and when they finde the honey, they never eat it, until they have called their yong ones. And then the old one going in doth nothing but bring out the hony, and give it to the young ones. A thing of great admiration, and an example of great charity.

In the Island of *Barbadoes*, and the adjacent Islands, are certain birds bigger than Sparrows, with a very great head, called by the English Logerheads and Counsellors, they live naturally on all sorts of Flies, and are great destroyers of Bees, for they have made a total destruction of all that have been carried thither.

Palladius de rerust. l. 1 Columel. Isidorus Hispalen. lib. 12 Etymol. c. 3

Crabs burned are hurtful to Bees, and also the smell of dung, and places subject to Eccho's, for Eccho's and great noyse much exasperate them.

There is no such creature called Clerus (as some) bred by Bees, Moths are bred in the combs where are few or no Bees, in lusty hives they are bred under the verges or skirts of the hive, but generated of Moths, not of Bees, as *Columella*, and from him *Aldrovandus*.

F. Milerius religio Borussor. Huldrichus Schumdel.

The Martins in *Russia* live for the most part on the tops of Trees, and greedily devour the Bees.

The Crocodile is much delighted with, and desirous of hony, Saffron is their antidote or preservative (which it seems he cannot endure) to safe-guard the Bees.

The dung of Poultry is supposed to be very offensive to Bees, but I have not taken notice of any such effect, although

though I have observed in several places, that for sheker the Hens would repair to the Hives (such as stand under Penthouses) and dung among them, howsoever (if you can) keep them away, and be sure to let no Hens sit under the Bee-boards, for the Bees wil sometimes come to them, which the Hens wil catch in their bills and kil; which other Bees smelling wil seek to revenge, but with their owne destruction; I have knowne above a quart of Bees killed thus by a Hen in a little space.

Lightning, especially Thunder affrights, and much disturbes them, saith Mr. *Mouffet*, and to confirme this tells us, that in the moneth of *August*, one thousand five hundred sixty six, being with the Dutchess of *Somerset*, desperately diseased, suddenly, (on occasion of a stroke of Thunder) under the next Bed-stead, he and others heard a murmuring and shril noyse, but at first knew not that Bees were housed in the seeling of the roome, underneath where they had inhabited thirty years. Mouffet theatrum insector. lib. 1.

And the day following (for want of sleep, as he supposed) flew up and down trembling, and making more than ordinary noyse, and in a distracted manner struck themselves against the windows, were extreamly provoked against the Family more than at other times, so that they are impatient of fear, as he concludes; as also of disturbance by night, when he saith they all sleep, and not at all by day; when indeed they sleep not all, for some watch, and make a constant buzzing (in full Hives) all hours of the night, until Autumnes cold forceth them up within the Hive, and makes them to lye close compact together among the uppermost combes; yet then (if they be asleep) they are presently awakened, not only with the least touch on the Hive, but of the ground near it. Nay, if you breath before the Hive, though at a yard distance, they wil presently come forth with a great noyse to examine the cause.

Snow is very hurtful when it dissolves with the heat of the Sun, for the Bees with the heat wil be tolled out of the Hives and they are no sooner forth, but they are dazled, and blinded, and cannot finde the way in again, but flying a while up and down being weary, think to rest themselves on the Snow, which they no sooner touch but they are killed; be sure therefore at such times to shut them in.

Sharp frosts, nipping blasts, chilling aires, drisling sleet, boisterous and cold winds, in the Spring, are very prejudiciall for the Bees, coming home weary and laden, are beaten down often in multitudes, and (unless the Sun shine out presently, or the winds calm) never recover the Hives. Let your Bee-garden be well defended (take heed of an eddy wind from some house or building) and let them stand low; I have observed, that out of six Hives, standing two foot high, and in the eddy of the wind, I have lost more Bees (being beaten down, and miscarrying on the cold ground, then out of sixty Hives, standing not much above a foot from the ground.

Arist. de hist. Animal. l. 8. c. 32.

Bees are sick in dry years, and in such times when the flowers are blasted. Concerning Bees sicknesses, hear what *Virgil* saith.

But if their bodies bee diseased (as Bees
By life are subject to our maladies)
Which may by signes infallible bee known;
The sick streight lose their colour, and are grown
Deform'd with leanness; they in woful wise
Bear forth their dead with solemn obsequies,
Or cloister'd else within their houses they
Sadly contain themselves, or lingring stay
About the door, in clusters taking hold,
Famish'd, and faint, and feeble by the cold.

Columel. l. 9.

The murrain among Bees is very rare: other diseases they are subject too, especially to a scowring, by gathering, or feeding on Tithymal, and the blowings of the Elm, and therefore in those parts of *Italy* where there are many Elms, there are but a few Bees. I deny not but the gathering of the Elme may bee dangerous in *Italy*; but I am sure in our parts, which are plentifully stored with Elms, they are no way prejudicial: Indeed they seldome gather of them.

Much ado is made by many Authors concerning Bees sicknesses, and the remedies. They tell us that they are subject especially to a *Cacochymia*, *Blapsigonia*, *Marasmus* and *Diarrea*. Whereas in all my long observation, I have found no proper sickness; accidentally indeed, when they are necessitated for provision

vision, or not well defended from winds and wet, they have an ill digestion, because they have little to eat, and they lose their brood, because they have not wherewith all to feed them; and their natural heat is wasted for want of meat to maintain nature; and they have sometimes a scowring not having meat proper and good for them, they then will sometimes gather of purging flowers, which doth not strengthen them, but make them more faint and weak.

And yet to all these various effects proceeding from one and the same cause, have the Ancients given sundry and divers names, as if the causes had been as diverse. *Varro* therefore giving directions what a man should observe that buyes Bees; mindes him to take notice, if they bee numerous, if they bee shining, and full; whereas if the combs bee not set in an even posture, if the Bees be hairy and thin bodied, they are to be refused, all which are but effects of hunger. Varro de re rustic. l. 3.

In a word, if you desire to have your Bees thrive, and prosper, keep them well from winds and wet, heat and cold, destroy their enemies, and let them enjoy a sufficiency of food gotten by their own industry; and if there be a want in some, timely supply them, and doubt not of, by Gods blessing on your endeavours, the increase and prosperity of your Bees.

CHAP. XXI.

Of the Hony-dew.

THe Hebrew word for Hony-dew is יְקָקוֹן *jeraḳon*, which comes from יָרַק *jaraḳ*, and signifies *spuere, exspuere, humorem evacuare*, as if it were *saliva siderum* (as *Pliny*) an excrementitious moisture, which the stars spit down on the fruits of the earth. By this word also is signified the Kings-evil. Buxtorf. lex.

In Latine *Rubigo* is a Hony-dew, as well as rust, a name from the effect, shewing how that by a hurtful touch, it stops the growth of some fruits that are obnoxious to it, making them to rust, eating out their state and substance, as a canker or rust J. Rowlandson Gods blessing in blasting.

Ribera com. in Amos c. 4.

fretteth iron; so that what is a disease of mettal is figuratively transferred to corn, and such like things, because it destroyes and consumes them, for with too much moisture the stalks wax pale, and the corn is turned to dust; but hee was much mistaken, not distinguishing between smutty and mildewed corn, for corn affected with the mildew is not turned into dust, but shrunk up, and prevented of its radical moisture, so that though it come to maturation (for it will ripen, and is best for seed) yet not to a full bigness and dimension.

Of the cause of smutty corn, I will speak briefly afterwards.

Some conceive shrinking of corn by the Hony-dew to bee thus occasioned. In fields less pervious to clear and strong winds (as in lower grounds, and narrow places between woods and hills) there falls often sultry and foggy mists, and those covering too close the fruits of the ground under them, as under thick mantles do cast that corn or kinde of grain which is subject to this malady, as it were into an unkindly sweat, at such times as the ears thereof are not yet sufficiently filled from the root, by which faint sweat is vented that sweetness that should feed the ear. Now this sweetness once exhausted or drawn out at the stalk, or straw, sticks close unto it being burnt, or made a dust by the extraordinary heat of the Sun, as it happeneth especially in the Canicular dayes, which (as it may seem) made the *Romans* sacrifice a Whelp or Puppy to Mildew. And this they did to prevent it, or to drive it away, if it had seized on their corn. That this prejudice is chiefly caused in narrow and close grounds wee grant, and seldome comes on hills, or large champion grounds. But yet it brings not damage to the corn this way, but rather thus, The corn in close places when the Hony-dew descends, not being ventilated and shaken with winds, the Hony-dew as it dries, becomes viscuous and clammy, and sticks close to the straw, and by the heat is hardened and congealed, and thereby stops the radical moistures from ascending, and so the ears being no longer fed, shrink and wither. As hard birding or tying of a mans arm, causeth (if continued too long) by stopping the circular motion of the blood, a mortification or gangreen. It comes not from any malignancy as some, nor because that the oily viscuous quality, that is in it

Ovid de fast. l. 4. Hier. Romano de la Repub. gen. l. 2. c. 7.

it stops the pores of the husk wherein the corn lyes, and deprives it from the aire, and consequently from nourishment, this is not the cause, but what was delivered before. But hee concludes it is, and therefore commends bearded Wheat, because the beard shoots off the dew, that it doth not so easily insinuate it self into the ear, and likewise causeth the ear to shake, by the least breath. *Credat Judeus Apella.* Howsoever had hee been acquainted with the inconvenience of bearded Wheat, he would rather have stood to the hazzard of a Hony-dew. First large letter in Mr. Hartlibs Legacy.

For cure Mr. *Remnant* prescribes, when you perceive by your Bees that a Hony-dew is fallen, to draw a cord over your Wheat as fast as may bee, before it be dried on by the wind or Sun. One in one furrow, and another in another, two or three furrows distant as they can well reach. One at one end, and the other at the other end of the cord, for the least motion will shake it off, it is so exceeding thin when it new falls. I dare not say (as some) that this can bee done with good profit, for *materiam superat opus*, the charge will exceed the benefit. Such as sow sixty or eighty Acres of Wheat must of necessity imploy many men, and perhaps many dayes together, for Hony-dews in a dry season fall frequently, and sometimes twice a day, and therefore it must be oft reiterated.

And the loss by it, is seldome great, it is rare to have one Acre in an hundred prejudiced by it, and yet we consist of inclosures, and much wood-land.

Pliny affirmed the Hony-dew to bee either the sweat of the heaven, or the slaver or spittle of the stars, or the moisture of the aire purging it self. Plin. Nat. hist. l. 11. c. 12.

Gualter saith, It is caused by the inconstant change of the aire, when immoderate heat cause raines, and cold raines expel heat. Gualter in Ames Hom. 1 p.

Dr. *Lake* saith, That too much moisture is the cause of it. Dr Lake in 1 King 8. 37.

Mr. *Butler* judgeth the Hony-dew to bee the quintessence of all the sweetnes of the earth, meaning as hee explains himself, the quintessence of flowers, because when the year is backward in his fruits, the Hony-dews are alwayes backward, coming only at such times, as the flowers have the most solid and best juice.

Secondly, because in more hot and southerly clymates, where the fruits are more forward, the Hony-dews are more timely; in *Italy* not untill *May* bee entred, but hee saith not usually with us untill a moonth after, whereas if the season bee warm and dry, often by the beginning of *May*, and sometimes a little before, alwayes in *May*, there are with us many swarms.

Thirdly, because the Countries that have store of the best and sweetest flowers, have ever the best Hony. It is true, that Hony is finer or courser, according to the flowers that the Bees gather of, but this other concludes (against him) that the Bees gathering is not chiefly, no not very much from the Hony-dews; for it cannot (almost) but be supposed that the exhalation must remain sometimes in the aire, before it bee concocted and fall, in which space either ascending, or descending by the motion of a gentle breath, it will be carried some miles from the place where it was first exhaled, so that grant it extracted from the flowers, yet that which was exhaled from good and fragrant flowers, may fall in woody and heathy places, and that which was exhaled from heathy ground according to the motion of the aire, may fall on good land, his rule then cannot be constant. And some years, when there are few or no flowers, yet are there many Hony-dews, as 1652. so that the matter of them could not bee extracted chiefly from flowers, and in extraordinary wet years, as himself instanceth in the year, 1613. the Hony-dews fell not untill the end of *August*, when most flowers had done blowing, and those that were, had a very weak and faint juice, and therefore it is not probable, that then should bee a competent matter for their production chiefly out of flowers.

It is agreed by all, as far as I can search, that the Hony-dew consists of vapours raised up into the third region of the aire, exhaled from all lower bodies (not onely flowers) both earth and water, which vapours being purged from the earthier and drossier matter, and throughly digested by the heat of the Sun, and after a sort made fatter by the cold of the following night, are thickned, and so condensated, fall down on the earth, trees and flowers.

Arist. de hist. l. 5. c. 22. Bees make Hony of the Hony-dew, saith *Aristotle*.

Bale

Butler saith, The greatest part of the purest Hony comes from above.

Seneca saith, It is not yet evident whether the moisture that Bees gather out of flowers be presently hony, or whether by a mixture or propriety of their own, they change it into hony. Sen. 84. Epist.

Aristotle before the rising of the *Vergiliæ*, denies that Bees gather any hony, but this is an apparent errour, They gather much hony, when there are Hony-dews, but yet more before any fall, if you respect the shortness of time they gather it in. Bees gather hony more or less all Summer, but least in Autumne, because the great dews and frequent showers, corrup tthe native hony which is bred in the flowers; and yet *Aristotle* acknowledgeth where there is plenty of Ivy which flowreth in the end of Autumn, the Bees gather much hony, but wee finde it not.

That great plenty of Hony comes from above, is acknowledged, and that the Oak among trees is principally instrumental to retain and keep the same on his smooth and solid leaves: yet I affirm, that there is a greater proportion collected from flowers, than from the Oak, and all other sorts of trees, I understand from the leaves.

This indeed is altogether gain-said by *Aristotle*: He delivers, that Bees gather not hony of flowers, but chiefly of the Hony-dew; and his argument is, because in a day or two, when the Hony-dews fall, some combs will be full, and in the end of Autumn there be flowers, but no hony, if any Hive bee taken, driven, or gelded, hee saith they would gather hony, if any were to bee found. Arist. de hist. l. 5. c. 19.

Wee are to know, That as great store of hony falls from above, so there is a native sweetness, or hony, in flowers, the Spring and Summer chiefly, which is not to bee found so plentifully towards the end of Autumn, because the flowers at that time of the year are weak and spent, and afford little, and that little, is usually exhaled with immoderate heat, or spoyled with frequent raines, or great dews; so that there is little, or no advantage at all from them, in respect of hony. Some *Sandaracha* indeed the Bees gather then, but that will not last long, therefore of necessity when Bees are late taken, for want of food, they cannot live long.

If

If Bees gathered hony chiefly of the Oak, which almoſt alone is retentive of the hony-dew (from flowers he denied they gathered any hony) how comes it to paſs that hony-dews falling late in the year, as in the years one thouſand ſix hundred and thirteen, and one thouſand ſix hundred forty eight, almoſt two months after the uſual time, namely, in the latter end of *Auguſt*, when there fell divers hony-dews, but the Bees were little the better for them, except only in the Heath Country, when the Heath-flower was in his prime, and there thoſe late hony-dews made [illegible]-fat ſtalls, but in other places the Bees generally miſcarried.

If they did principally gather of the Oak, the leaves thereof were then as retentive of it [illegible] at Midſummer, but rather hereby it appears, that the hony-dew is received into the hollow ſockets of Flowers, and there long contained, until by the Bees it be extracted.

Hony-dews therefore falling late when moſt Flowers have done blowing, not having any proper place to contain them, are, either quickly waſhed away with the raine, or exhaled with the Sun.

Further, that Bees gather hony of flowers is manifeſt, in many Iſlands where grow no Oakes, nor yet other Trees, nor yet are near them by ſome miles (as the Iſland of *Fowlneſs*) yet Bees thrive very well, and yeeld ordinarily a greater increaſe of hony than in other places.

Pliny ſaith, the Bees gather the hony-dew from the Elme, Teile-tree, and Sallow; but our Elmes are not retentive of the hony-dew, nor yet our Sallows often, ſometimes a little; more plentifully is the Hop, and would be very beneficial to the Bees, were it not for the bitterneſs of the leaf corrupting the hony; Cherry-trees (eſpecially the wild Cherry-tree) are retentive of the hony dew, and thereupon curle up the leaves, and ſo contain it longer, but to their owne prejudice, for the radical ſap or moyſture is thereby checked, and aſcends no more, and oftimes their tops wither and dye, but the Oak of all others moſt plentifully affords it; the great Maple alſo (vulgarly called the Sycamore tree) the leaves of other Trees are more ſpongie and porous, and drink it in as faſt as it falls.

L. Verul. Silva ſil, cent. 5 496.

The *L. Verulam* makes a doubt whether any cauſe be from the

the Oaken leaf it self, to concoct; or whether it be only that the leaf is close and smooth (and therefore drinketh not in the dew, but preserveth it)

That which in Scripture is called Manna, by the wisest of the Greeks was called Ἀερομέλι, a hony-dew; and *Celsus* in his Physick saith, by the *Syrian* dew is understood that which by a strange or forrein name is called Manna. Cælius Rhod. Lect. Antiq. l. 21. c. 3. Idem. lib. 25. c. 25.

The present Manna, and that wherewith the Children of *Israel* were fed forty years in the Wilderness, differ not much from the hony-dew.

First, That Manna of the *Israelites*, and the manna used by Physitians differ not much, *Fr. Valesius*, and also *Io. Fr. Picus* Earl of *Mirandula* attests the same in certaine learned Verses, and *Lemnius* agrees hereto, saying, the Manna now in use by Physitians is not much unlike the Manna that the *Israelites* fed of. Fr. Vales. de sacra. Philosoph c. 57. Levin. Leminus Herb. bib. explicat.

The Hony-dew and Manna doe not substantially differ, the Dew is not Hony except it be gathered by the Bees, concocted in their bodies, and condensated (by their heat) in the combes; for when it is thickned of it self, it is called dry manna; but if it be not coagulated it is called liquid manna, as a congealed dew, viscuous, and very pleasant to the taste, of which sort is that which is called Cedria, mentioned by *Hippocrates*, and it is the same which the Hebrews call Manna; it is plentifully gathered of the greater Cedars on *Mount Libanus*, and *Mount Sinai*. Hippocrat. lib. de vulneribus. Pet. Bellonius, lib. 2. observat. c. 25.

The Characters of the present Manna agree to the Jews Manna; Exod. 16. 14.

First, it fell on the ground like a hoare Frost, in the night.

Secondly, the taste thereof was like Wafers made with hony, which agrees with the manna now in use.

Thirdly, it was gathered in the morning, before the Sun waxed hot, for the heat thereof did dissolve it, and make it to evaporate and vanish away.

Fourthly, if it were kept, it bred Worms; I was informed from a learned Gentleman, that the Hony-dew hath bred Worms before night, of which he was an eye-witness in our Country.

Some gather the excrements of Bees (of a yellow colour, and

Levin. Lemnius, Herb. lib. explicat.

hony taste) which they finde near the Hives, and some ignorantly suppose to be thickned by an aerial concretion; but this cannot be, for the excrements of Bees are always liquid, and fluid, and if there be any reality in this report, It must bee the Bee-bread, whereof much is yellow, and all of a hony taste; it is gathered in little round parcels as bigge as small pins heads, but they are brittle, and broken, will not easily coagulate, for they are not clammy; and the Bees let many fall at the Hive doors, if the entrance be small: but they must be very fools that will take this for Manna, much more they that wil be cozened with the excrements.

It hath been questioned, whether Manna was knowne to the ancient *Grecians*, some deny it, because the name is not found; others affirme it, as *Guido Pancirollus*, that Manna was known to them, but not under the name of Manna (which word the *Arabs* borrowed from the *Iews*.

Galen lib. 3. de aliment. facult. Amiretus de Asiæ ponderibus. J. Langius l. 1. Epist. Medic 64

Galen speaking of the same, acknowledgeth that in his time in *Asia*, this kind of hony was found so plentifully on the leaves of Trees, that the inhabitants said, *Jupiter* rained hony; and long before *Galens* time, *Amiretus* hath exactly described it under the name of aery hony, as *Jo. Langius* affirms; and the reason of this name is evident, because hony like a dew falls from Heaven, or the Air before day-light; for when the exhalations are elevated from the earth, and the waters by the heat of the Sun, and then being perfectly attenuated and concocted, are thickned, and congealed by the cold of the night into hony, graines, or sand, they stick upon herbs and leaves of Trees (sometimes on stones, and the ground) The inhabitants therefore spread Hides on the ground, and beat the Trees, and that which falls (like hony) they gather, and put into earthen vessels, where in a short time it hardens, and becomes as it were like sand.

Matthiol. comm. in lib. 1. Dioscorid. c. 73 Mesue lib. 1. de simpl. c. 9

It is like a kind of Gum, as *Fuchsius* delivers, and *Matthiolus* confirms the same, and *Mesue* also saith, the *Arabian* hony is a dew falling on Plants (and Stones) whose matter is an elevated vapour, which hath its digestion and maturation in the air, when it is equal and propitious, with fortunate aspects, but it is diversified according to the diversity of things on which it falls, falling on plants it participates of the nature of Plants, so that the best hony is usually where the most temperate Plants grow.

Galen. lib. 3. de alim. fac.

Now

Now if *Galens* description of his Airy hony be compared with this, it accords in every thing; and *Galen* in the same place saith, that this Hony-dew, or Manna, is so like to that hony that the Bees gather, that they have one and the same matter, namely dew,

Valerius Cordus endeavours by many (but not invincible) Arguments, to prove that they differ; with whom *Hen. Saltmouth.* and *Guido Panyrollus* concur, and accord. Valerius Cordus Annotat. in Dioscor. lib. 2. c 194. Guido Panyrollus Nova reperta, l. 2. tit. 6.

First, the Bees hony, saith *Cordus* is found at all times of the Spring, and Summer, but the Hony-dew (and also Manna) but sometimes and seldome.

I answer, that there is a native sweetness in some flowers at most times of the year, and plentifully in a mild and forward Spring, but yet notwithstanding the Bees gather much hony, when the hony-dews fall.

Secondly, the Bees hony is found both night and day in the Flowers, but the hony-dew only in the morning.

I answer, It is true, that the Bees gather hony out of the flowers a great part of the day, but there is (besides the native hony) an addition of hony from the hony-dew in the cells of the flowers, where it is preserved longer than on the Oaken leaves, being there obvious to every drying blast, and exhaling raine.

And so saith the *L. Verulam*, Flowers that have deep sockets, doe gather in the bottome a kind of hony, as Hony-suckles (both the Woodbinds and the Trefoile) Lillies, and the like, and in them certainly the flower beareth part with the dew, and therefore places abounding in Manna, doe also yeeld plenty of hony; Thus *Cephalenea*. Moreover, the hony dew doth not only fall in the morning early, but in hot gloomy seasons, often in the after noon. L. Verul. Sil. sil. cent. 7. 669. Sands relat. lib. 4

Thirdly, the Bees hony most abounds in flowers about noon, but the hony-dew as soon as the Sun waxeth hot, perisheth; I answer, it perisheth where it is open, and exposed to the Sun and Wind, but where it is well defended from either (as in the small sockets of flowers) it endures much longer.

And I affirme further, that Bees gather most hony in the fore-noon, except the hony-dew falls in the after-noon, and neither raine washeth it away, nor the Suns hot rayes exhale it.

Fourthly, the Bees hony while it is contained in the flowers,

is liquid, but the hony-dew, namely Manna is compacted together, and congealed; Answer, Although the hony be liquid in the combes when it is newly gathered, yet thereupon it follows not that it was so liquid in the flower, being by a transcendent Chimical skill extracted forth of a more grossie substance, and after rarefied, and defecated in the limbeck of their bladder. moreover, as we shewed before, in many parts of *Asia*, the manna falls more liquid, but hardens after it is gathered.

And againe, it is true in some parts of the World there falls, or rather is gathered this concrete, or coagulated hony (the right manna) Manna in *Calabria* is gathered from the leaves of the Mulberry-trees that grow higher in the mountaines, it falls like a dew in the night time, like a dew, and therefore liquid; it is gathered from the leaf of the Mulberry-trees, but not of such as grow in the Vallies, and it falleth upon the leaves by night.

Sands relat. l. 4

It should seeme that before these dews come upon Trees in the Vallies they dissipate, and cannot hold out; it should seeme also the Mulberry leaf it self hath some coagulating vertue, which conspissateth the dew, for it is not found upon other trees.

L. Verul. Silva fil. cent. 8. 781

And it is more than probable that that Manna that is gathered coagulated, hath its condensation from the vertue of the tree, or plant from whence it is taken.

In *Persia* they call Manna *Xirqueſt*. *Xir* in *Persian* is Milk, and *Queſt* is the name of the Tree which produceth it, or rather whereof it is gathered; the best comes from *Hiez*, from whence it is carried in great quantity to *Ormuz*, and from thence throughout all the East; it is white, soft, sweet, and in Graines like Incense or Mastick.

Pedro, Teixeira de los. Reyes de Persia l. 1, c. 7

They have another sort called Toraniabin, gathered on certaine plants like wild thistles; there is a Drug or kind of Manna brought from Ulrad, not farre from the River Sind in the *East Indies*; the Naturals call it *Geukar*, of *Kar ſalt*, and *Geu ſat*, for of the dew which falls and congeales in the lowen fields (mark, it falls liquid) it is gathered and called by us Salgeu, and more corruptly Salgema.

Idem lib. 1. c. 22

I must a little digress to reforme a Geographical errour, the River *Sind* which was mentioned before, is the principal of five, of which the River is compounded, first *Bchat*, which ariseth

near

near *Kabul* towards the coast of *Persia*. The second is called *Chanab*, which comes from the Province *Quexmir* fifteen dayes journey distant from *Labor*. A third is called *Ruwy* springing near *Labor*. A fourth, *Via*; And a fifth *Sind*, which giveth name to the Land and Kingdome, commonly called by the Portugals *Sinde*. And therefore Mr. *Herbert* was deceived, who supposed the River *Indus* to bee called *Sind*. To return again. Mr. Herberts Travels into Africa and Asia, l. 1.

In the vallies of *Chile* in their season fall great dews (which collect and harden) like bread tempered with Sugar or Marchpane (Mark, they fall liquid dews) which is as wholesome as that which they call Manna: By all which instances, it appears that Manna is first a liquid dew, and after inspissated by a vertue of the tree, or plant on which it falls, and falling on other plants or trees, it never condensates. Ant. de Herrera decad. 7. l. 1. c. 7

From the City of *Balsora* scituate in the end of the Red-sea on the banks of the Rivers *Tigris* and *Euphrates*, is brought a kinde of Manna in bottles like thick hony, so that some Manna, is never coagulated. P. Teixeira relation de los Reyes de Persia, l. 1. c. 7.

Fifthly, Hony-dew is contained in flowers, but the Hony-dew falls on leaves of trees. Answer: only on leaves of trees? Nothing less, on flowers also, and a great part, as I shewed before of the hony in flowers, is not natural but adventitious.

Sixthly, The Bees hony doth not onely last longer, but conserves other things, and that many years; but the Hony-dew, or Manna will not keep uncorrupted one year, nor yet preserve other things from putrefaction; and in the Northern Regions there is plenty of hony, but rarely any Hony-dews.

So *Magirus* Hony-dews are very rare in our Countries, in regard of our cloudy aire, but frequent in the Eastern Countries. Answer, That the lasting of hony longer than Manna may bee from a further concoction on which it hath in the Bees bodies, as also from the continued great heat of the Bees after it is reposited in the combs, whereby it comes to further maturation and perfection*. And whereas hee saith, Hony-dews are rare in the Northern Regions, wee often by wofull experience finde the contrary, receiving by the frequency of them, great prejudice in our hops and corn. Jo. Magirus Phisiolog l. 4. c. 6.

* Vide Cap. 32. of the Brasilian Bee called Zealots.

Seventhly, If the Hony-dew bee the matter of hony, how

comes it to pass that it falls onely on flowers, and not on the plants and leaves of trees? Answer, It falls not only on flowers, but on leaves of trees and plants also, though some plants and leaves, are not so tenacious, and retentive of it, as the great Maple, and the Oaken leaf, but being more porous and spungy, suck it up, and consume it.

Lastly, When the Hony-dew falls, the Bees gather it, and flock to it, but onely for their present repast and food. Answer, There is no rustick conversant among Bees, but knows the contrary, and by experience can say, that they then gather more hony in two or three dayes, than in two or three weeks after they cease.

Helmont. tumulus pest.

Ribera, as you may remember, attributes smuttiness of Wheat to the Hony-dew; and *Helmont* seems to be of the same opinion, calling it *Triticum roratum sive mellitum*, and so do some others also. Now in a word to undeceive them. The cause of smutty Wheat, is not at all from the Hony-dew, nor yet from any of those causes, that the author of the first letter in Mr. *Hartlibs* Legacy delivers. Nor yet is it a deficiency onely in the vegetative faculty, for it grows and produceth a blade, and an ear, but then it wants power to quicken and give life, as it were, by blowing to that corn that is put out in the ear; so that not being enlivened, it proves abortive, and turns into a stinking black powder (*Corruptio optimi pessimo*) smelling like a red Herring, or Carrion.

Now this falls out for want of a nitrous, and thereby a nutritive quality in the grain, for it is most certain, that salt is the seat of life, and vegetation, and so the subject of nutrition.

This by the way, take notice of, that they are most under ears that are subject to that malady, not therefore subject to it, because they are lower than others, but therefore lower, because of a deficiency and weakness in the vegetative faculty. And usually if one stalk hath the ear smutty, all that arise from the same root are infected, yet it falls out (though rarely) that sometimes one side of the ear is good corn, and the other bag, for one side blows, and the other doth not, and whatsoever blows not, will be smutty.

Many years together I suffered much damage by it, but knew not how to remedy my self, but after the projection of divers

divers experiments, at last successfully, I fell upon this course, I caused a Hogs-head of salt water to be fetched, and put into the water near a bushel of Bay-salt not at once, nor yet into the Hogs-head, but pouring half of it at a time into a Tub, I after put in half the salt, wherein when it was melted, I imbibed my Seed-wheat thus: Filling a close well-wrought Ozier-basket (that would admit the water, and hold near a bushel) with Wheat, and then put it into the Tub, holding it by the ears, and when it was all well moistened, took it out, letting the water drain as it stood on the Tubs side, into the Tub again. And when it began to leave dropping, poured it on a floor, and strewed upon it as it was turned over, near a shovel full of slaked lime, not that lime addes any thing to the vegetation (perhaps it accelerates the growth) nor yet secures it from vermine (as some conceive) but onely dryes it (being done over-night) that it is more nimble and better to sow the next day. Lime without steeping your corn, doth not prevent smuttiness, but corn thus imbibed, and then sown without lime, will not smut.

Thus adventitious Salt supplies the defect of that nitrous quality which some grain are defective of, and are hereby quickned, refreshed, and as it were impowred to perfect vegetation to maturation.

Such as are remote from the sea, must make a brine which will bee every way equivalent, onely more chargeable, I have many years made trial of this course, and without any great curiosity, for my seed have had constantly bright wheat, and so also my neighbours, to whom I readily divulged what I found good for the publike; but in my publick Discourse, I forget too much my private Design.

CHAP. XXII.

Of Honey.

Cardan affirms, That neither Honey nor Waxe is made by any creature but a Bee, which is a truth, if wee take it de subtili. Cardan lib. 9.

con-

conjunctively, otherwise not. There is no other creature that makes both hony and waxe.

And that which *Scaliger* saith, *Pliny* observes out of *Aristotle* (which I remember not) that Waspes make wax, is false whosoever affirms it. Combs they make, as some other Insects, but they are not wax, but drossie collections of old pales, and other old wood, tempered with a gummy liquor flowing from the Oak, or (felled) Elmes whereby they become tough and capable to contain their young. Try to melt them, and you shall quickly resolve your self.

Scaliger de subtil. exercit. 191.

And whereas *Scaliger* saith, There is in the *Molucca* Islands hony made by Flies less than Ants (the truth is questionable, for it is onely reported by *Pigafetta*) I suppose hee called them Flies, onely for their smalness. The earth-Bee, with us a kinde of wilde Bee, is smaller, and yet gathers Bee-bread abundantly, and hony also for ought I know.

And most of the *American* Bees are not bigger than Flies, but yet are Bees, not Flies.

And for his instances of the solidity of some hony (admiting of the Histories) they do not at all enervate this position that Bees onely make honey.

Among the *Troglodites* in a Country called *Balgada*, there is hony found whiter than snow, and as hard as a stone; And in the Country about *Calicut* the hony is so hard that they carry it in baskets, what then, was it not made by Bees? I have seen as white, and as hard made by my own Bees. Indeed besides the domestick Bee, the humble Bee makes hony, but little in quantity, and nothing so pleasant in taste for quality.

In *China* there is not onely plenty of Bees wax, but there is another sort which is not onely whiter, but also better, for it is less glutinous, and being lighted, burns brighter: It is made of certain worms which they breed up in trees for this purpose. They make a third sort of a fruit of a certain tree which is not less white than the former, but burnes nothing so brightly.

Math. Ricii de Christiana expedit apud Sinas l. 1. c. 8.

Thus have wee found hony and wax too, made by other creatures besides the Hony-Bees, but both by no one creature.

Libanius saith, Hony and Wax may be gathered without the Bee

Bees labour, there it in the flowers, saith he, and leaves of plants, both hony and wax, which by sublimation may be easily segregated, but as a fruitless and needless speculation, I wil not insist upon it. Andreas Libanius, lib. 2. Alchym. tract. 1. c. 45

Gorthem saith, hony is a sweet juyce, hot and dry, it seemes to have its original from the Hebrew דבש which is delight, and thence the *Germane* Honig, which wee contracting call hony. Mat. Martinii lex Philolog.

By hony Metaphorically is understood every pleasant, dainty, and savoury meat. Dictionar. Etymolog. trilingue, I. Fungeris, Cæl. Rhod. lect. antiq. l. 6. c. 2

Hony is the Symbol of Death, as Gall is of Life, wherefore the Ancients offered hony in Sacrifice to the infernal Deities, for because of pleasure, death creeps on us.

Hony signifieth Marriage, saith one; and is taken Figuratively for carnal pleasure, and signifies a worldly life, not abhorring delight, for marriage is honourable; nor is a Christian to be blamed that lawfully useth it. But as in the old Law, although hony might be received for gifts, and first fruits, yet it was forbidden in Sacrifice: so in the Church (only the *Romish* Church) the hony of Marriage is honourable in Lay-men, yet are married persons prohibited the Altar, for it is not lawful for a Priest to be married. Barradas itinerarium filiorum Israel ex Ægypto lib. 6. c. 5

There are many sorts or kinds of hony; Aerial, Manna, Reed-hony, Sugar, and that which is gathered by Bees; the best hony is that which is so pure that it glisters yellow (*Aristotle* commends the white) having a good smell, not too hard, nor too thin, sweet to the taste, and hanging together, once being boyled yeelds little scum.

Another saith, that is the best hony which is in a mean between thick and thin, sweet in taste, and yet sharp, pricking the tongue; for colour either pale, or pellucid, and shining like Gold, odoriferous and new, and which taken up, hangs so together that it wil not be easily separated; in a word, the best is at the bottome. Scolia Guil. Plantii in Fernel. method. medendi, lib. 7

A measure that containes fifteen ounces of hony, wil hold but ten ounces of wine, and nine of oyle. Fernel. method. medendi, l. 4. c. 6

Diophanes prescribes to know adulterate hony thus; if it will not burne purely, but rather thus; melt a little in a porringer, and Wecker. de secret. lib. 8

and if it be adulterated with flower, or any thing else, you shall perceive it by the scum; if it be pure, it will be as clear as rock water.

Porcacchi descrit. delle isole di Sicilia.

New hony is better than old, the *Sicilian* was with the Ancients in highest estimation, so that by a Proverb, the *Hyblean* was notorious, *Baubinus* commends the Attick before all other.

L. Verul. Sil. sil. cent. 7. Arist. de hist. lib. 5. c. 22.

Some imagine that the chief labour, or rather skill of the Bee is about the Wax, and that the Bee (according to *Aristotle*) gathereth hony only from the hony dew; but this wee made clear before, that she maketh, that is, extracteth more from the flowers, than she gathereth from the trees.

Cardane fondly supposeth, that they neither make, nor gather properly, but convert what they gather into hony, by vertue of a little bagge or bladder sweet as hony; and like saith he, is made of like.

Various are the opinions of the Ancients concerning those that first found out hony, with the nature of Bees; some say by *Euhemerus* in the Iland *Ceos*; others, by *Euthronius*, in the dayes of *Erichtonius* on Mount *Hymette*, a Country of *Attica*, *Nicander* saith in *Crete*, in the time of *Saturne*.

August Ser. 15 ad frat. in eremo.

Aristodemus the Philosopher studied many years to find out the nature of Bees, and could not; *Aristomachus* saith *Cicero* did nothing else for sixty two years; and *Pliny* saith of him, that he first taught and found out the ordering of Bees, and was so earnestly affected to them, that he studied day and night how hee might best order, and increase them according to their kind.

Diod. Siculus lib. 6 Macrob. Saturnal. l. 1. Justin l. b. 13

Others ascribe this invention to one *Thassius*, who deserved great commendation for his skill among Bees, *Diodorus* saith the *Curetes*, a people of *Crete* first found out hony, *Macrobius*, *Diodorus*, and *Pliny*, and *Columella*, to *Aristeus* to *Thessalie*, to whom *Justine* agrees, although in his forty fourth Book he ascribes it to *Gargoris*, but only I conceive for *Spaine*; fabulous *Berosus* cites him by the name of *Melicola*, *Polidore* to the *Jews*; I hold it ancienter, for *Jacob* sent a present of hony to the Governour of *Ægypt*.

Polyd. Virgil de invent. rerum lib. 3. c. 3

Godignus de Rhithmorum

In no part of the world is more hony than in *Æthiopia*, the cause whereof is the plenty of Flowers which grow there (as such

such take notice of it that deny Bees gather hony of Flowers, and the many Rivers, Lakes, and Waters. rebus, lib. 1. c. 10

Hensegahen a Town of *Hea* in *Africa* abounds greatly with hony, which serveth the inhabitants both for food (consisting of two hundred Families, having neither Gardens nor Fruit-trees, but only Barley and Oyl, the inhabitants being sloathful) and for Merchandise to sell in the neighbour Countries, they cast away their wax. I. Leo. lib 8

The Mountaines in *Africa* are most plentiful of hony, whose tops are always covered with Snow, as *Nifisa*, *Sensana*, *Tagodast*; *Thegia*, *Beni-feneſcare*, but white hony is there a rarity; yet in the Kingdome of *Morocho* they have very much hony, some for whiteness like to Milk, other clear and yellow like gold. I. Leo. lib. 8. & lib. 3. Cælii August. Curionis, Marochensis regni descript. Maryfoti itin. part 3 lib 2. c. 4.

Poland abounds with hony, which they finde in hollow trees, and Caves of the earth, besides the Husband-mens Hives. Col. Rhod.

In *Mycone* there are no Bees, and if they be brought thither they dye.

Mycone is one of the *Cyclad* Islands.

In *Ireland* are many Bees, as well in Hives at home, as in hollow Trees abroad, and Caves of the earth, contrary to *Solinus* and *Isidore*, and it is as good as in other Countries, and more store would be there, but that there grow some Trees that are venemous, but what those Trees be he names not. Ortelii Thesaur. I. de la Haye thresor des chartes.

Aldrovand saith, there be no Bees in *New Spaine*, and *Isidore* relates the same of *Scotland*, and saith, that stones and dust brought thence and laid in the Hives, makes the Bees forsake them, but false, as *Polidore* acknowledgeth. Polyd. Virg. lib. 13. hist. angl. Sand. relat. lib. 4

Malta is hotter by much, than any other Country which is seated in the same parallel without Rivers, but hath sundry fountaines, and hony in abundance. Porcacchi descrit. del Isole di Malta.

And the plenty and goodness of the flowers in *Malta* is the cause that it affords excellent hony, therefore saith a learned Phisitian, that Hony is *Flos florum*, the flower or quintessence of flowers, nourishing not a little with his sweetnes, and preserving things from putrefaction. Marcilius Ficinus, lib. 2. de diet. c. 28

Sicilia likewise though hot, yet is stored with Rivers and Fountaines; the Winter most temperate, no day so tempestuous, as affordeth not some Sun-shine, and about *Ætna* the

flowers are so numerous, and fragrant that the Dogs cannot hunt.

Hier. Girava de Cosmograph.

In *Podolia*, and indeed all *Sarmatia* (understand *Sarmatia* in *Europe*, for there is *Sarmatia* in *Asia*) now it contains *Polonia*, *Russia*, *Prussia*, *Lituania*, *Livonia*, *Podolia*, and *Moschovia*: whereto is added *Alba*, *Rusia*, and *Vandalia*.

Dictionar. Etymol. tri lingue Spngeri.

In a word the people were anciently known by the name of *Scythians*. Here is more hony then in all the world besides, for they fill sometimes great dry pits with combs, that the Bears coming to eat the hony, accidentally falling into them, have been suffocated with the abundance.

Cluo Magnist. delle cose Septen. l. 22.

Nature denies them the vine, but the God of nature hath more than sufficiently recompenced that defect with an incredible quantity of hony, which they use (besides to several other purposes) to make mead with.

Gio. Boterole relationi univers. falla part 1 2.

There is great abundance in *China*, for they wonderfully delight in keeping of Bees, there is also very much wax, you may lade Ships, nay Fleets therewith.

Mendosa, Treatise of the Kingdom of China

Hony is more plentiful in *Russia* than in any part of the world, thereof they spend great quantity in their ordinary drink (which is Meade of all sorts) and many other uses, and yet good quantity is carried out of the Country, which may better appear if wee take notice that there hath been shipped fifty thousand Pood yearly of wax, every Pood containing forty pounds, which amounts to a thousand Tun, and yet the great men use but little Tallow, but much wax for their lights.

G. Fletcher Russ. Commonwealth.

Lettere d' Ab. Compense intenole cose di Mol. & P. Jovio delle cose del Mos. apud Rhamusi. 2. Volum.

Muffet perstringeth *Jovius* for applauding the *Russian* hony, for saith hee, There is not a Bee in the whole Country, and hee justifies himself from the relation of *Sebastian Baro*, how truly from the premises you may easily determine.

About the River *Occa*, distant about thirty Leagues from *Mosco*, is the greatest store in all the land of *Russia*.

Purchas pilg. 3. part. l. 2. c. 1. Incouragement of setling a Planter, at Madagal. J. Leo l. 8.

There is a report that a greater quantity than that mentioned before is brought yearly to *India*, from the Coast of *Malindia* near adjoyning to *Madagascar*, namely fifteen hundred Tuns.

There is little hony throughout all *Egypt*, and that little is not very good, for it is alwayes moist and thin like water, the reason whereof is said to bee, because the flowers are over-

moist

moist by the overflowing of *Nilus*, but in *America*, where the lands are not overflown, but exceeding dry, yet the hony is alwayes liquid, so that it comes from some other cause. Alex. Aphrodis. Prob. 74.

Corsica yeelds many venemous trees, from which if the Bees suck any thing, they make the hony very bitter; It seems these trees were but in some places, for *Aristæus* reports, that the *Corsicans* were long lived with the daily use of hony, which is very plentiful with them; some parts were infamous for their bad hony, occasioned through their plenty of Yew trees, which *Servius* confirms, saying, The *Corsican* hony is bitter, and *Martial* mentions it. Estates of the world translat. by Ed. Grimst. Servius com. in 4 l. Georg.

Some vainly conceit, all hony at first to bee sharp and bitter, but in process of time being concocted, it returns to its proper sweetnesse. Martial 9. Epi. Nicetas com. in Greg. Naz. t. 2. orat. 43.

In the City of *Trapezunt* in *Pontus*, the hony gathered of the Yew trees smells filthily, and makes them that are well in their wits, mad, and but cures those that are distracted. Arist. de Mirabil. Auscult.

In some parts of *Spain* the hony is poyson: Also at *Heraclea* in *Pontus* some years, they have an herb called *Aegolethron*, hurtful to Goats, the flowers whereof, especially in a wet Spring have a poysonous quality. Signs of it, it never thickens, the colour is more red than other hony, a strong kinde of smell, presently it causeth sneezing, they which eat of it throw themselves on the ground seeking to cool themselves, for they are all on a sweat. And if dogs eat their excrements that are affected with it, they have the disease.

Likewise in *Pontus* among the *Sanni*, there is a hony which causeth madness, which is supposed to bee gathered from the *Rhododendron*, whereof the Woods are full. In some parts also of *Persia*, and in *Getulia*, a Province of *Mauritania*. Plin. Nat. hist. l. 21. c. 13

Galen saith, his father had hony so bitter with age, as if it had been gathered in *Pontus*. And therefore *Servius* on those words of *Virgil*, *Dulcia mella premes*, saith, It is not a superfluous Epithite, because there is bitter hony. So is there sharp hony also which comes by age. Gallen. l. 1. de Antidot. c. 2. Idem l. 3. de compos. medic. secund Gen.

The hony is bitter near *Phasis*, and about *Heraclea* a City of *Pontus*, from the plenty of Monks-hood, or Wolfes-bane, saith *Dioscordes*. Strabo l. 11. Dioscorid. l. 6. c. 8.

Pet. Bellonius saith, These Countries of *Pontus* abound with

an herb called *Black-cameleon*, the root whereof hath an excrescency called *Ixia*, which is a deadly poyson, and kills presently those that drink it. Now, saith he, if the Bees gather the substance of the hony from the Chameleon-flower, there is no doubt but the hony is very dangerous, but saith hee, wee are not ignorant, that the Bees gather not the matter of their hony from the flowers, but onely of the leaves when they are covered with the Hony-dew. But this great observer, for want of observation failed, trusting too much to *Aristotle*, and others, that the Bees did not make, but onely gather hony.

The *Sanni* of whom wee spake before, paid a tribute of Waxe to the *Romans*, but the hony, as dangerous, was not vendible.

Strabo l. 11. *Strabo* writes, that the people called *Heptacometes* beyond *Colchos*, slew three cohorts of *Pompies* souldiers when they passed through the mountain Country, for they mingled a kinde of poysonous hony with their drink, and easily massacred them when they were besides themselves.

Diod. Siculus, l. 14. *Diodorus* reports, That the *Grecians* returning from *Babylon* in the Country of *Colchos*, found abundance of Bees, and did liberally feed of the hony, but as soon as they had eaten it, they became mad, and presently threw themselves on the ground, and lay like dead men; but the day after, the same hour they were taken, they recovered their wits again.

Dioscor. l. 2. c. 77. In *Sardinia* is no venemous creature, yet the hony is poysonous. *Dioscorides* saith, It is very bitter, and that they gather it of wormwood, and that it is excellent to cure blemishes and spots of the face. *Galen* mentions it, saying, If any hony be bitter as the *Sardinian*, it is of a mixt faculty, as if some of our hony were tempered with wormwood. *Virgil* saith, It is gathered of the Yew tree, *Sicuna Cyrneæ fugiunt, examina taxus.* *Diodorus* from the Box tree.

Galen lib. 7 de simp. facul. Med.

Diod. Sicul. l. 6.

Plin. Nat. hist. l. 21. c. 14. In *Candia* there is a mountain called *Carnia*, nine miles in compass, in which space, no Flies are ever seen, and they never touch hony that is made there, and brought from thence.

In *Thracia* the hony is not only solid, but sandy, such as is gathered in the Heath-country of *Hampshire*, very course, and red, full of little clots or knots, like sand, but much greater:

Pliny

Pliny dislikes it on good grounds, as the worst hony.

All hony hardened, keeps the same solidity, diverse from water and other liquids, for all other liquid things once compacted, dry, and are attenuated, but hony doth not.

That hony works as wine in the comb untill the twentieth day (asserted by some) is a fable, and that the cover that stops it up is the feces from the working, which they that maintain the former deliver, is as ridiculous; make trial, and you shall finde it wax as the comber.

Some combes in plentiful years, are shut up the first day.

Hony in the comb is all pure, but after it is expressed, some feculent and dreggy matter, partly from the combes, partly from the Bee-bread and spar, somewhat corrupts the purity, all which it purgeth up to the top, contrary to all other liquids where the sediment is at the bottome.

The use of hony was prohibited in the old Law, because it is a symbole of pleasure and delights, in regard of the sweetness thereof. Now pleasures are displeasing to God, no lovers of them can offer a gracefull sacrifice unto him. Therefore the Philosopher said, Because of pleasure, wee doe wicked things. Fr. Valesius de sacro Philoso. c. 16. Arist. Ethic. l. 2. c. 3

Another saith, By prohibiting hony in the Law, wee are to understand Philosophical ostentation, and pleasant allurements of humane eloquence, very sweet in sound, but not in substance. Cæsius Rhodiginus Antiq. lect. l. 28. c. 27.

Another, Hony was not offered in sacrifice, nor yet wax wherein hony is deposited, but oyl for the Lamps in Gods Temple, which was expressed from the bitterness of the Olive, for vices are sweet, and therefore the Harlots lips drop as an Hony-comb. Hieron. Epist. 2. ad Gaudent. & Epist. 19. ad Eustochium. c. 1.

Aquinas saith, Hony was not offered in sacrifice, because it was ordinarily offered in sacrifice to Idols, and also to prohibit, and avoid all carnal sweetness and pleasure from those, who intended to offer sacrifices to God. Tho. Aquin. 2. q. 102. a. 5. ad 14 m.

The heathens used hony in their sacrifices, especially the *Aborigines*, and that in several of their Deities, and yet *Plutarch* propounds a question why they did not use it. But it is certain they offered no wine to their gods, but water sweetned with hony. Stuckius Sacrificie, descrip. Plut. quest 5. Symp. Hier. Romans. l. 2. c. 3.

The

Goodwin Ant q. l. 1. c. 2. & Alex. ab Alex. genial dier. l. 5. c. 26

The *Romans* had divers names for their Religious places; one was called *Scrobiculus*, which was a furrow, or pit, containing an Altar in it, into which they powred the blood of the slain beast, together with hony, and other things when they sacrificed to an infernal Deity.

Hier. Romano l. 2. c. 8

The *Romans* sacrificed to *Pluto* three times in the year, the beasts for sacrifice were black, old, and barren, and they made ready in this sacrifice a drink of wine and milk, mixed with hony and blood.

Guil. Moses unvailed

One gives this as a natural reason, because being burnt, it had no good smell.

Idem. l. 2. c. 9

In the Feast of *Bacchus*, all the Priests being crowned with garlands of Ivy, offered sacrifices made of fine flower, and hony fried with oyl, and sometimes with hony, because *Bacchus*, as they supposed first found them out. *Horace* saith, They sacrificed hony taken out of the Combs to him.

Horat. 2. carm.

Bacchus by some was called *Bryseus*, from an old word, *Βρύω* to flow, because he first taught the use of hony: And

Ovid. l. 3. Fast.

Ovid saith, That hee was not onely the inventor of hony, but that hony was offered in sacrifice to him.

Plutarch de Isidor. & Osir.

The *Egyptians* when they celebrated the feast of *Mercury*, did eat hony and figs.

Hist. Romano l. 2. cap 11

Among many other things which the *Romans* offered in sacrifice to *Ceres*, they used to present hony and wine. And because *Ceres* sought her daughter *Proserpina* ravished by *Pluto* with torches, or candles, which shee lighted in the *Vulcanean* mount *Etna*, therefore a day of burning lamps and candles was dedicated to her by the heathen, and from hence came the feast of Candlemass among the Christians.

Goodwin Ant. l. 2. c. 13. Alex. ab Alex. genial dier. l. 6. c. 8.

In the sacrifices to *Bona dea*, or the earth, they used wine, but called it not by the name of Wine, but Milk or Hony, and the vessel wherein it was put, the Hony-vessel.

Eurip.

The ancient *Greeks* quieted or appeased their dead with hony, *Iphigenia* in *Euripedes* vowing sacrifices to her brother, promiseth to sprinkle the blood of a Mountain-calf, the liquor of *Bacchus*, and the labours of yellow Bees.

Chaucer in the Knights tale.

Chaucer relating the burning of Arsite, tells what they used to cast into the Funeral flames.

With vessels in her hand of gold full fine,
All full of Hony, Milk, Blood, and Wine.

They gave the deceased a Wafer tempered with hony to appease *Cerberus* withall. Adr. Turneb. l. 28. c. 45.

In *Peloponesus* they began their sacrifices to the goddess *Melissa* which was adored among them, because shee taught them the use of hony. Hier. Romano lib. 2. cap. 1.

This *Goropius* denies, for hee saith, *Noah* first after the deluge sacrificed to God, and God smelled a sweet savour. This was the first banquet after the flood, wherewith *Noah* feasted *Jupiter*, for which, because it was sweet, hee was called *Melissus*, namely for offering hony to *Jupiter*, and because this Hony-service or sacrifice came from him willingly, hee was said to have a daughter at home called *Melissa*, namely the hony goodness of his minde, whereby hee made a feast to God. Gorop. Becan. Hieroglph. l. 13.

And then because with this sweetness, or *Melissa*, hee presently obtained that favour from God, by which hee was abundantly supplied with all necessaries; for this, hee was said to have another daughter, which was called *Amalthea*. So that having *Melissa*'s good will, and *Amalthea* a large plenty of all things; and by these his two daughters daily to feast *Jupiter*, posterity fained that *Jupiter* being an Infant was nourished by the daughters of *Melissus*.

In ancient times, Junkets prepared with hony, were proper to marriage solemnities, of which cates, or honied cakes, the Bridegroome first tasted, and then the Bride, and after the Guests. Pineda de rebus Solom. l. 5. c. 12.

Curtius speaks of it in *Alexanders* marriage with *Roxane*. And *Pineda* saith the same of *Solomons* marriage with *Pharaohs* daughter to bee obscurely implied, *I have eaten my hony-combe with my hony, I have drunk my wine with my milke; Eat O friends, drinke, yea, drinke abundantly, O beloved.* Which is an invitation of the Spouse to the tasting of it: Where the Septuagint Reads, *I have eaten my bread with my hony.* Moreover it signifies any extraordinary sweetness, as also milk, or any more pleasant dainty. And truly hony and wine seem to bee proper to Nuptial feasts, which is more clear, *Ezek.* 16. 13. For where- Q. Curtius l. 8. Cant. 5. 1.

as all the rest that went before concerned marriage; this was a wedding Ceremony to eat bread made of fine Flowre, Hony, and Oyl, by the communion whereof the Bride was taken into the Partnership of the Kings bed and Kingdome.

Jo. Leol. 3. In Fez after the Espousals and Marriage ceremonies performed, diverse Guests are invited to a Banquet, where for great daincies is first brought a kinde of bread fried and tempered with hony.

J. Miletius Religio Borussorum. Among many other Nuptial ceremonies which the *Borussians* use, after they have washed the Brides feet, and with that water sprinkled the Marriage-bed, and all the utensils of the house, and the Guests also, then they anoint her mouth with hony, and covering her eyes with a vail, lead her to all the doors of the house, which they bid her strike with the right foot.

Religio Russorum ad Dom. Chytreum. The *Russians* use many strange Marriage-solemnities. The Priest having a book open before him, sings with a loud voyce one of *Davids* Psalmes. And then taking hold with his hand on one of the Bridegrooms curled locks, speaks to him after this sort. Tell mee, O Bridegroom, brother, friend, Wilt thou bee this young womans husband, Wilt thou sometimes beat and cudgel her, &c.

Here the Bridegroom solemnly protests to do the office of a good man. And then turning his speech to the Bride, he asketh her, if shee be sufficient for a husband (for their Maids of ten and eleven years old marry) Will shee have a care of the household affairs, &c. which shee affirms. Then the Priest puts on either of their heads a Garland made of Boughs, in the circumference whereof is written in *Russe* letters, *Increase and multiply*. While he doth this, many wax candles are lighted, and a bowl full of Mead is then given to the Priest which hee drinks all off to the new coupled at one draught, and they cheerfully pledge him and then return him the cup again.

G. Fletcher Russe Commonwealth c. 21. After many preceding ceremonies, the Bridegroom taking the Bride by the hand they go on together with their friends after them towards the Church-porch, where hee is met by some with pots and cups in their hands full of Mead (the *Russe* proper wine) whereof the Bridegroom taketh first a Chark or little cup full in his hand and drinketh to the Bride, who opening her hood or vail below, putteth the cup to her mouth underneath

neath it (for being seen of the Bridegroom) pledgeth him again.

The *Romans* in the Nuptial supper, gave the new married couple the juyce of Poppy tempered with milk and hony. Ovid. l. 4. Fastorum.

The Ancients did use hony in all their Sweet-meats, as we do Sugar, indeed they knew not what Sugar was. Ad. Tarnes. adversus l. 2. c. 25

The *Romans* used hony in their first service at their feasts, as also in their second. And indeed formerly no kinder of meat, but were with the use of hony made more acceptable. Fulvius Ursinus.

Pithagoras usually fed on hony, and Hony-combes, because they were prepared without mans labour, and were a kinde of heavenly food. Lilii Greg. Syntagm. Symb. c. 2.

To this day the *Jews* give Infants a taste of butter and hony before they suck. Calvin in Esaiam c. 9.

Among the *Illirians* was first of all the use of Mead, which in *Aristotles* time the *Greeks* were scarce acquainted with. Aristot. de Mirabilibus auscultat.

CHAP. XXIII.

Of Tree-hony.

THere was anciently, and is still Tree-hony, as well as Bee-hony. And this Tree-hony is of two sorts, either a plentifull hony-dew, which might bee gathered; or else sweet saps or juices drawn out, or concocted from several sorts of trees and fruits, to the consistence, taste, and likeness of hony.

Of the first sort it is reported that near the *Caspian* sea, there are plenty of trees with leaves like Oaks, yeelding much hony, but it must bee gathered before the rising of the Sun, for the rayes thereof quickly consume, and waste it. Mr. Anton. Cocci Sabellici Enn. 4. l. 5.

In *Arabia Nabathea*, they gather hony plentifully of the Trees, which they call Wild hony, of which mixt with water, they use to drink. Diodo. Sic. Bibl. 19.

There is a Tree called *Occhus* in the valies of *Hircania* that distilleth hony in the mornings. L. Verul. cent. 7. c. 612.

In *Lidia* there is plenty of hony gathered of the Trees of which the inhabitants make loaves, or lumps of such hardness Arist. de Mirabil. auscul.

nes, that without many blows, they cannot bee broken.

Mouffet Theatrum Insect. l. 1. c. 3.

The inhabitants of Mount *Libanus* spread hides under the trees, and then shake and beat them, and after gather up the hony, which they reserve in earthen pots.

J. Acosta natural and moral hist. of the Indies l. 4. c. 23.

The *Maguey* is a Tree of wonders, it yeelds Hony, Water, Wine, Oyl, Vinegar, Syrrup, Thred, Needles, and a thousand other things. It is a tree which the Indians esteem much in new *Spain*, and have commonly in their dwellings some one of them for the maintenance of life: It grows in the fields, and hath great and large leaves, at the ends whereof is a strong and sharp point which serves to fasten little pins, or to sow as a needle. And they draw out of this leaf as it were a kinde of thred which they use. This liquor being sodden, turns like Wine, which grows to Vinegar, suffering it to sowre, and boyling it more, it becomes as hony, and boyling it half, it serves as Syrrup.

Hachluits Voyages 3. part. Iob Hort.

Below by the root of the *Maguey* Tree, the *Indians* make a hole, whereat they take out twice a day a certain kinde of liquor which they seethe in a great kettle, untill the third part bee consumed, and then it waxeth thick, it is as sweet as any hony. It is not so sweet as the hony (saith another) of Bees, but it is better to be eaten with bread.

Hen. Hawks ibid.

Fernand. Cortesela. 2. relation apud Ramus. 3. volum. Herrera decad. 8. l. 3. c. 1.

In and about the City of *Themistitan*, besides the hony of Bees, is hony of the Canes of *Alaia*, which Canes yeeld very much hony, and as sweet as the juyce of the Sugar-cane.

In *Santa Cruse*, and the Country about it, which is in the Province of *Tucuman* grow sweet Canes, of which they make very good hony.

Geor. Cedrenus hist. compend. Bedade sanct. loc. 9. c. 14.

The fruit of the Palm-trees growing about *Jericho*, being trodden and pressed out, yeeld great quantity of hony.

Baron. Annal. Eccles. t. 10.

There grow trees in *Palestina* with broad and round leaves of a milky-colour, and a hony taste, very brittle by nature, which they eat, rubbing them in their hands. This a certain Bishop called *Arebulphus*, who had visited the Holy-land, supposeth to be the wild-hony that *John Baptist* lived of in the wilderness.

Isidor. Pelusiot l. 1. ep. 131. Theophil. in Evang. Mat. c. 3.

But others say, It was a mountain-hony made by wilde Bees, bitter, and unpleasant to the pallat. *Theophilatt* wilde hony was made by wilde Bees in trees and rocks.

They get the Palm-wine after this sort in *Congo*, they bore a hole

hole near the top of the tree, whence flows a liquor which they receive into pots fastened underneath, at first it is in taste and colour like milk, it quickly soureth. Iartic. Thesaur. indicus.

In *Cranganor* they make hony of it after this manner, within three dayes (for after of its own nature, it proves vineger) they boyl it in Caldrons, or Kettles until two parts bee wasted, and then it is very sweet hony. Of this hony mixed with water, and purged twenty dayes together, they make an excellent sweet wine. I might speak of the *Indian* Palm, or Coco-tree, which likewise yeelds hony, but I will adde no more. Novus orbis Iosephus Indicus.

CHAP. XXIV.

Of Wax.

WAx is either natural or artificial, the natural Wax is the grosse part of the combe, containing the hony and Bee-bread, sometimes the Seminaries for generation. And this is either Virgin-wax, or of a courser sort: the Virgin-wax is that which is made by a swarm, or a stock new driven, not that only which is made by the younger Bees, as *Hollerius*, for they work altogether. Hollerius l. 6. Instit. Chyrurg. c. 1.

This is called by some *Propolis*, as *Aldrovand.* observes out of *Actuarius*. And *Scribonius Largus*, It might bee expected, that I should speak somewhat of *Propolis*, *Commosis*, *Misy*, and *Pissocera*, used anciently in Physick, and supposed to bee made by the Bees. But I can finde no agreement among Philosophers, nor yet Physitians what they are, and am certain that they are not what *Aristotle*, *Pliny*, and others determine them to be, and therefore I will leave the discussion to others. Only in a word, *Misy* saith *Aristotle*, is the black drosse of wax of a sharp smell, I suppose he means the feces of the wax when it is melted and strained; *Propolis* seems, saith *Scaliger* a transitive first name of *Misy*. Actuar. de compos. med. Arist. de hist. anim l. 9. c. 40. Scalig. com. in loc.

Gesner translates it *Commosis*, but *Pliny* make a difference between *Commosis*, and *Propolis*, wherefore *Scaliger* was of opinion, that *Commosis* and *Misy* were different things. Plin. lib. 11. c. 7.

Scribonius takes Virgin-wax (as before) for *Propolis*; *Silvaticus*.

cus takes it for the dregs of the combes, but amiss, saith *Mouffet*, and yet he would have it to be Hive drosse, but whether of a Swarme or a Stock he declares not; between which is a great difference; *Andreas Belluensis*, the filth or drosse of the sides of the Hive; I subscribe to *Sylvaticus*; Propolis is as much as subturbe drosse, with which the Bees fasten the skuts of the Hive to the board; it is not saith *Mouffet* now to be found.

Waxe is thus made by the Bees; they creeping upon the Flowers with their fangs and tongue, as *Aristotle* and others say, extract a gummy and viscuous matter, which they receive with their fore-feet, and rubbing them on the thighes of their hind-feet, there fasten it, very little at a time, and scarcely visible.

Mouffet saith, the burden is of the bignesse of a lentil on either thigh, and that it is of divers colours, according to the nature of the Flowers, yellow, pale, red, Saffron colour, white, black, &c. but hee and many others were mistaken, taking Bee-bread for Waxe.

Dioscor. l. 2. c. 7. Plin. lib. 21. c. 14

The best Waxe is somewhat yellow, fat, pure, odoriferous, and expressing in some sort a scent of honie; *Dioscorides* commends the Pontick or Cretan, *Pliny* commends the Punick, and it is called Punick, saith *Iacobus Dalechampius*, because it is the whitest.

Johannes Anglicus in rosa anglica, lib. 5. c. 1

Artificial Waxe is that whereto the perfection of it the skill and industry of man is required, and this is variously performed; two waies are set down by *Anglicus*, First, that the Waxe should be often melted, every time taking new water until it be white. Another way is thus, that when it is dissolved in the water by the fire, to dip into it a Glass vial, or vessel clean rinsed, and that which sticks to it let it be dried in the Sun, and Moon; and this so long continued until you have gathered up all the Waxe, and then set it abroad in the open ayre for it grows white by the force of the Sun (that I say nothing of water) because so the hony is taken out of it, and those parts expire by whose thinnesse the colour is made.

Waxe as it is newer, so it is better, for it is more odoriferous, purer, and apt to take impressions, Waxe is worst at the bottom, best at the top, so that it be not frothy.

Mr. Remnant.

The Bees gather Waxe all the year, from the blowing of the Willow to the Ivie.

In old Waxe saith *Aristotle*, there is bred small white Creatures, the least of creatures, called Acari, in regard of the smallnesse, not devisible, I suppose he means Mites, which are bred also in many other things.

The Kingdome of *Chandecan*, watered with the river *Ganges*, is plentifully stored with Waxe, which in abundance the people finde in the Woods, and therewith supply *Bengala*, and a great part of *India*. Franciſ. Fernandus

The *Livonians* knew not the use of Waxe, and therefore pressing out the hony threw it away; *Cadamustus* reports the like ignorance of the *Africans* in *Mauritania*. Aloyſius Cadamuſtus.

From the Coast of *Malindia*, near adjoyning to *Madagascar*, there is brought one thousand five hundred Tun of Waxe yearly to *India*.

Fecuteb a Town of *Hea* sendeth Waxe into *Portingales*, and to *Temsethne* resort ships from *Portingale* for Waxe. Io. Leo, lib. 3.

In *Fez* on *Mahomets* Birth-day the Schollars of every School, which are two hundred, celebrate a Feast, when the fishers are bound to send each man a Torch unto the School, whereupon every Boy carrieth a Torch in his hand, some of which weigh thirty pound; these Torches are most curiously made, being adorned round about with divers fruites, of Waxe, which being lighted betimes in the morning doe burne till Sun rising, when the solemnity ceaseth. This day useth to be very gainful unto the School-masters, for they sell the remnant of the Waxe upon the Torches for above a hundred Duckets. Idem, lib. 3.

The *Persians* in old time, and also the *Africans* had a custome to wrap up in Waxe their dead, that so they might preserve them for a long time. Funerali antichi da Theodoro Porcacchi, lib. 2.

The *Romans* in the Burial of a Senator or chief Officer, had certaine waxen Images of all his Predecessors carried before him on long Speares. Goodwin, Romanticque. lib. 2. c. 7.

Waxe was much used anciently, to make the Images of emi[illegible] persons deceased, as also in our daies, which by many circumstances (as appears) were borrowed of the *Romans*; who when the deceased Emperour was to be consecrated, the whole City gave over all exercises, as if it had been a Festival day: [illegible], they burned the dead Body with sumptuous exequies, and then they made an Image of Waxe as like as was possible to the deceas-

deceased, and set it in the porch of the Pallace upon a great bed of Ivory, placed aloft, and covered all over with cloth of gold; this Image lay pale on the Bed as if it had been a Sick Person, about the bed sate a great part of the day all the Senators cloathed in black, and on the left side the Ladies, that in regard of their Husbands, or Fathers, were most illustrious, and none of them did wear any gold, or any other ornament about their necks, but were all cloathed in pure white garments, and by their countenance seemed very sorrowful, and they continued thus in this guise seven dayes; but every day the Phisitians came to the body, and made shew of feeling the sick Parties pulse, and alwaies reported that he grew worse and worse, until in the end they said he was dead.

As soon as they had declared him dead, the most noble and proper young men of the Order of the Senators and Cavalery lifted the bed on their shoulders, and carried it by the Sacred way into the ancient Market, where the *Romane* Magistrates were accustomed to lay by, and renounce their command and authority.

In this place was erected a Tribunal of Wood, which seemed to be of stone, on which was framed a certaine edifice, sustained on every side with Pillars, and variously garnished with Ivory and Gold, on which was laid another Bed with ornaments of Purple and Gold woven together, and about it, were the heads of divers Sea and Land creatures; now in this Bed they placed this Image of Waxe triumphantly adorned, which they had brought from the Pallace, and there stood a very fair youth with a fan of Peacocks Feathers to scare away the Flies, as if the Emperour slept.

In the meane time while the Image lay there, the living Emperour, the Senate, and their Wives drew near to the Bed, and they were all met together, there the Ladies sate under the Porch, but the Senators open; on both sides of the Market were set up Scaffolds to ascend on, [illegible] on one side were a Quire of noble youths, all patricians, and on the side a Quire of illustrious Women, which sung Hymns and other Songs in honour of the dead, with sad and mournful voyces. But I must play the Procrustes with this Discourse, and referre them that desire to know further, to *Dion*, or *Herodian* Greek Historians.

CHAP.

CHAP. XXV.

Obſervations and Diſcourſes Hiſtorical, and Fabulous.

BEfore the battel of *Phaſilon* Bees lighted on the Altar, and alſo on the ſhips, preſaging *Pompies* overthrow; and therefore when in the Army of *Brutus*, there ſetled a ſwarm of Bees, the South-ſayers bad him to ſhift his Camp, leſt hee ſhould receive loſs and damage in that place. Roſcius Roman. Antiq. l. 3. c. 9. Dion. Rom. hiſtel. 41. Appian l. 2.

All the Statues of *Antoninus Pius* in *Hetruria* were filled with ſwarms of Bees, which were ominous preſages of his Empire. Iulius Capitolinus.

It was ever eſteemed as an ill omen for ſwarms of Bees to light in places where they were not accuſtomed, and therefore reported as a preſage of the death of *Claudius*, that a ſwarm of Bees ſetled on the Capitol. Cornel. Taeitus l. 12.

One ſpeaking of the prodigies that did precede the battel of *Canna*, ſaith, that ſwarms of Bees lighted on their Enſignes. Silius Italicus.

Nec denſa trepidis apum ſe involvere nubes
Ceſſarunt Aquilis.

Among the many Prodigies ominating *Brutus's* deſtruction, ſwarms of Bees lighted in his Camp. Swarms of Bees ſettled in the Camp of *Dinſus* when hee fought proſperouſly at *Arbela*. Appian de bello civili l. 4. Plin.

Ambroſe ſleeping in his ſwadling cloaths having his mouth open, a ſwarm of Bees came and ſetled on his mouth, which the father and mother walking by, forbad the Maid that tended him to bruſh off, where a while continuing, at laſt they flew up into the air, untill they could bee ſeen no more. Baronius Annal. Eccleſ. c. 10. Cicero divina. 2. Val Max. l. 1. c. 6. I. Sarisber. de nugis curial l. 1. c. 13.

Plato ſleeping in his ſwadling cloaths, the Bees brought honey to his lips, foretelling the ſingular ſweetneſs of his eloquence. Iuſtin l. 23. I. Sarisberiens de nugis curial. l. 1. c. 13.

Hiero ſometimes chief Magiſtrate of *Sicilia* the ſon of *Hieroclitus*, a Noble-man, who drew his original from *Celus*, the ancient Tyrant of *Sicily*, but his mothers ſtock was mean

and contemptible, for hee was born of a Maid-servant, and therefore as a disparagement to his fathers race, was cast forth, whom the Bees (wanting all humane help) fed with hony, which being known, the father by the *Augurs* counsell received again, and brought up as the Heir of the Kingdome.

Ælian l. 2. c. 53

Ælian citing *Antenor*, reports that the inhabitants of a certain City in *Creta* were forced to forsake their dwellings by certain Bees called *Cholicboides*, which did miserably molest, and sting them.

Willer. Tyr. archiepis. hist. lib. 9. & Raimund. de Agiles Hist. Francorum

The Citizens of *Marra*, two dayes journey from *Antioch*, being besieged by *Godfrey* Duke of *Bullen*, among other things which they threw over the walls to drive away their enemies, cast over Hives full of Bees.

Appian de bello Mithridat.

Lucullus Army besieging *Themiscyra* scituate on the banks of the River *Thermodoon*, and by Mines seeking to overthrow the walls, the inhabitants opened them above, and threw in Hives of Bees among them to their great trouble and vexation.

Bonfin. l. 4. decad. 3.

When *Amurath* the Great *Turk* besieged *Alba Greca*, the Inhabitants, besides other things, cast Hives of Bees among the *Turks*, whereby they were greatly annoyed.

Vitichindus l. 1 gest. Sax.

A Captain of the Emperours being besieged by *Giselbert* the King of *Lorrain*, restrained the enemies when they entred the place, by casting hives of Bees; for the horses being enraged with their stings, overthrew their Riders, or were altogether unserviceable.

Orosius de rebus Eman. l. 8.

Lupus Barriga warring with the *Moors* in *Mauritania*, and besieging a Town called *Tornis*, the inhabitants being at the last cast, threw over the walls abundance of hives of Bees, set on fire, wherewith the *Portingals* were so burnt, and stung, that they were forced to give over, with the wounding of their General, and many others.

Suidas,

Cozenours and Cheaters were thus anciently punished, they divested the guilty person of his cloaths, and then anointed him with hony all over his body, and set him in the Sun with his hands and feet fast bound, that by many reiterated stingings, and the Suns heat, they might receive a death, worthy of their life.

Georgius Brawn l. 4. urbium precipuar.

In *Sivil* a City of *Spain*, if a woman beats her husband, shee is carried on an Ass through the City naked from the girdle-sted up-

upwards, and being first anointed with hony, besides other despights, and injuries, suffers not a little misery from the Bees, Waspes, and Flies that molest and sting her.

Marcus an old man in the reign of *Constantine*, overthrew an Idol Temple at *Arethusa*, and was taken under *Julian* the Apostate, and first scourged on his naked body, and after other punishments, in the last place put in a basket, being all over anointed with hony, and so set abroad, whom the Bees (thinking hee had robbed them) stung therefore to death. Theodore. l.3.c.7.

Hermond the son of *Amyntor*, and *Lysodice* being a childe, and coming to the Hives to rob the Bees, was killed with their stings.

Onesilus the brother of *Gorgus* King of *Salamis* in the Isle of *Cyprus*, fighting against *Artybius* a Persian General, was slain, and his head cut off, and hanged over the gates of *Amathusium*, a City in the same Island, which hee had sometimes before besieged; into which when it was empty, a swarm of Bees entred, and filled it with combs, this is reported as a Prodigy (and doth not prejudice the cleanlines of Bees) for consulting the Oracle, they advised to take down the head and bury it. Herodot. Halicar. Terpsichore. l.5.

Livonia is replenished with stately Woods, and those furnished with industrious Bees, which sometimes being numerous, are put to hard shifts for habitations. Mr. *Barkley* an English Merchant, did in one of these Woods eat hony out of a mans skull, wherein a swarm of Bees were, and bred as it hanged. Purchas Pilgrims 3. part. l.3.c.20.

It is reprorted that in the Sepulchre of *Hippocrates*, the Prince of Physitians, for a long time a swarm of Bees lived, and wrought hony in it, and that this happened extraordinarily, is concluded, because that Nurses anointing childrens mouths near the grave, with the hony easily cured them.

Dionisius the son of *Hermocrates* swimming over a River upon his horse, his horse was mired, and could not bee pulled out by any means, hee leaped off his back, and got safely to the bank, and so forsook the horse as no longer his: But the horse followed after, and neighed, whereupon he returned, and when he had hold on his Main to mount up, a swarm of Bees encompassed his hand, which hung on his Mane a presage of his future command and Empire. Ælian. var. hist l.12.c.40.

Pausanias in Beotieis. The *Trophonian* Oracle was thus found out: When as a year or two together, there was no rain, some were sent from every City to *Delphos* to implore help. To whom desiring a remedy for the drought, *Apollo* commanded them to go to *Labadea*, and seek a remedy for their evill of *Trophonius*. Going therefore to *Labadea*, but not able to finde the Oracle. *Soon* one of the Ambassadors an old man, when he had espied a swarm of Bees, resolved to follow them whithersoever they went. When therefore hee saw them flying to a Cave, hee entred in, and understood that place was the Oracle which they sought for.

Theocritus 11. narrat. Eidyl. 7. *Comates* feeding the flock of his rich Master in *Sicily*, was sometimes accustomed to offer somewhat of his flock to the Muses; which when his Master knew, hee reproved him very sharply, whom *Comates* intreats not to bee angry, for by the Muses help there should be a large remuneration. Go to, saith his Master, let us make trial whether the Muses will feed thee, and inclosed him in a hollow tree, and there left him to perish with famine. And at the years end returning, found his servant alive, and well, and many Hony-combs about him, for the Bees by a hole had entred into the tree, and maintained him.

Æsop. Fab. 85. The Bee-master being absent, one came and stole the combes out of the Hive, who afterwards returning found his Bees plundered, and while he stood still a while to examine and consider concerning the author of it: The Bees came home from work, and finding their house robbed, and him standing by, did fal upon him, and cruelly sting him. To whom hee thus spake, *Oh you wicked creatures, you let go unhurt him that robbed you, and punish me that am careful of your safety.*

Natal. Com. Mythyolog. l. 5. c. 11. *Melissa* one of the Oread Nymphs finding Hony-combes in *Peloponesus*, invited her fellows to taste thereof, with the sweetness whereof they were so ravished that the *Grecians* called the Bees by the name of that Nymph.

Sands relat. l. 4. *Jacobus Sanazarius* that excellent Poet, hath his figure cut to the life in *Mergellina* (near *Naples* where he lived) from whose mouth the Bees do seem as it were to suck hony.

Tit. Livius *Livy* doth relate that there was found two Coffins of lead in a tomb, whereof one contained the body of King *Numa*; being some four hundred years after his death; and the other his booke

books of ſacred Rites and Ceremonies. And that in the Coffin that had the body, there was nothing at all to bee ſeen, but a little light cinders about the ſides, but in the Coffin that had the books, they were found as freſh as if they had been but newly written, covered over with watch candles of wax, three or fourfold.

Ageſipolis a King of the *Lacedemonians* dying of a Feaver near the City of *Olynthia* was preſerved in hony, and ſo carried to *Sparta*, where hee had a royal Funeral. Xenophon de rebus geſtis Grecorum, l. 5.

Claudius Cæſar had a *Hippocentaure*, a Monſter, part horſe, part bull, brought out of *Egypt* in hony, which *Pliny* ſaith he ſaw. Cæl. Rhod. lect. ant. l. 6. c. 3

Aſrith the widow of King *Edgar*, ſometimes Monarch of this Iſland, traiterouſly ſlue King *Edward* his ſon, that her ſon *Ethelred* his brother in law might (as hee did) ſucceed him. Some ten years of age was hee when his brother *Edward* was ſlain, and hee out of childiſh affection wept for him bitterly; which his mother extreamly diſliking, being author of the murther, onely for his ſake, moſt cruelly beat him her ſelf, with a handfull of Wax-candles. So that hee would never endure Wax-candles. But another Writer ſaith that *Ethelred* would never endure any Wax-candles, becauſe hee had ſeen his mother unmercifully with them, whip his brother in Law, King *Edward*, either report may bee true. Rob. Gloceſtrenſis. Vit. S. Ed. apud Ranulph. Ceſtren. l. 6.

Now the Sword and Scepter is taken from the *Jews*, inſtead of other penalties they inflict ſharp penances according to the nature of the crime. Thus the Adulterer ſatisfieth for his hot luſt in cold water, wherein hee is enjoyned to ſit ſome Winter dayes; and if the water bee frozen, the Ice is cut out, and hee ſet therein up to his chin, as long as an egge is roaſting. In Summer time hee is ſet naked in an ant-hill his noſe, and ears ſtopped, and after waſheth himſelf in cold water. If the penance ſeem lighter, they enjoyn him further to run through a ſwarm of Bees, and when the ſwelling of his body through their ſtinging is abated, he muſt do it again, and again, according to the meaſure of his offence. If hee hath often that way offended, hee is bound to indure that penance many years. Purchas Pilgrimage l. 2. c. 19. ex Buxtorf.

Hunding the 23. King of *Sweadland*, upon a falſe report of his brother in Law *Hadings death*, King of *Denmark*, invited all his Nobility to a ſumptuous feaſt, to conclude which, hee Krantzius.

had provided a very large veſſel of Mead, of which hee drew out himſelf to them untill they were all drunk, and then in token of love to his ſuppoſed dead friend, plunged himſelf into the veſſel, and ſo was willingly drowned (but ridiculouſly and fooliſhly) ſome applaud and prefer him therefore, before many heroical *Greeks* and *Romans*.

I. Magnus hiſt. Suconum.

Hoſtilia is a Town in *Italy*, watered by the River *Po*, the inhabitants whereof (when meat for Bees grows ſcarce about them) carry their Hives into Boats, and by night convey them up five miles againſt the ſtream. In the morning the Bees go forth to their work, and ſo do they ſhift places, aſcending up the River, till by the ſinking of the Boat, they know their Hives to bee full of hony, and then return they home, and take it.

Plin. Nat. hiſt. l. 21. c. 12.

What is the reaſon why among the *Sarmatians* there is plenty of hony, and in *Africa* ſmall ſtore of Bees? And hee renders this as a reaſon, the plenty of trees, and variety of flowers, which in a few dayes after the ſnow is diſſolved, embroider all the fields, and the many Fountains and Rivers wherewith they are much delighted.

Ambroſ. Leo Problem. 180.

Whereas in *Africa*, the fruits and the flowers by the violent heat are quickly withered, and the waters are ſcarce, ſo that of neceſſity thoſe things being wanting wherein Bees delight, there muſt needs bee few, or in ſome places none at all. His reaſon is not worth an anſwer, had hee been read in hiſtory, hee might have learned the contrary. *Jo. Leo*, *Joan des ſantos* would have (beſides many other credible Authors) convinced him of the plenty of Bees in *Africa*. But no wonder if hee were a ſtranger abroad that was ignorant of Countries near home.

Hee affirms that in *Germany*, *France*, *Britain*, *Italy*, there are none, or few Bees, becauſe (if you will beleeve him) there are few trees, fruits, waters.

In *Angola* they have great ſtore of hony, which they thus procure, they hang in the top of the Eliconde tree a hollow peece of wood, or cheſt, which the wilde Bees being there numerous, quickly finde, and laboriouſly fill once in a year with hony and wax; which the Negroes then take with ſmoke, rewarding the induſtrious creatures with robbery, exile, death.

Andrew Battel in Purchas Pilgrims ſecond part 17. c. 3.

It will not bee altogether impertinent to give you a deſcripti-

on

on of this tree, with which the Bees are more delighted than any other. The Eliconde-tree is very tall, and exceeding great, ſome as big as twelve men can fathome, ſpreading like an Oak, ſome of them are hollow, and from the liberal skies, receive ſuch plenty of water, that they are hoſpitable entertainers of thouſands in that thirſty Region. Once have I known three or four thouſand remain at one of thoſe trees, and thence receiving all their watry proviſion. The Negroes climb up with pegs of hard wood (which that ſofter eaſily receiveth, the ſmoothneſs, not admitting other climbing) and I think that ſome one tree holds forty tun of water. This tree affords no leſs bountiful hoſpitality to the back, than belly, yeelding (as her belly to their bellies) her back to their backs, excepting that this is better from the younger trees, whoſe tenderer backs being more ſeaſonable for diſcipline, are ſoundly beaten for mans fault; whence came the firſt nakedneſs, whereby one fathome cut from the tree, is extended into twenty, and is preſently fit for wearing, though not ſo fine as the the *Juzanda* tree yeelds, which yeelds excellent cloath from the inner bark.

This tree is alwayes green, of a ſtrange form, eſpecially in the branches that grow very high, and caſt down very ſmall threds, which touching the earth do bring forth roots, from whence other plants or trees do ſpring forth moſt abundantly in great numbers. By like beating of their Palm, they make Velvets, Sattins, Taffeties, &c. But I deviate too far from my ſubject. Linſchoten. 2. Book.

The burning of Waxen-candles on Candlemaſs-day had its original from the *Roman* Sacrifices called Februals. Beat Rhenan. annot. in 1. lib. Tertul. adverſ. Marcion.

Bears are much tormented in their eyes, which is a principal cauſe why they ſo much deſire to eat hony out of the Hives, that being prickt, and ſtung with the Bees, their throat, eſpecially receives a phlebotomy, or blood-letting, for they have no better remedy to eaſe their brain and eyes burdened, and overcharged with humors. And. Thevet. Coſmograph. de Levant. c. 7.

In the Iſland of *Seylan* are certain barbarous people called *Pachas*, they live naked in the woods and thickets, their principal food is Dears fleſh, whereof there is great abundance, which they ſhoot and kill with their arrows, and cutting them in peeces, filling the trunks of old hollow trees with hony, whereof they Texeira l. 1. c. 35.

have

have plenty, then they put the fleſh therein, and let it remain there till times of neceſſity, and then eat it, conſerving it onely in the hony, without any corruption.

Hackluit's Voyages, 2. part of the 2 Volume.

In the Country of *Benin* on the coaſt of *Africa*, is ſuch plenty of hony, that the Natives bring to the Engliſh trading there, earthen pots of the quantity of two gallons full of hony, and hony-combs for a hundred ſhells.

Joaon. dos Santos liuro primeiro da Ethiop. Orient c. 23.

About *Sofala*, and generally in the Oriental *Ethiopia*, breed *Zangaons* (if I be not not miſtaken, Bees) after this manner. They make a ball of clay, and ſtick it in the walls or tiles of their houſes, with many holes after the faſhion of a Bees, or Waſpes-comb, and in every hole they put a Worm or Maggot, like thoſe that breed in Cabbages, ſome green, others black, others white, others gray; ſo that they are not all of one kinde, or caſt; but whatſoever they finde, they take and carry it unto the comb that they have made of clay, and in every hole they put a worm, and ſtop it up with freſh clay, and ſo incloſe all the worms in their ſeveral cells, and there within they generate other *Zangaons*, (or Bees) (underſtand by generation of others, onely their tranſmutation, whereby they are others from what they were, and the following words import as much) with legs and wings, which when they are perfected, eat through the clay, and come forth, and flye, and after they are grown great, they make a like brood. So that of ſtrange children of diverſ caſts or kindes, they make proper children. A thing, ſaith the Author which much amazed mee. But whether theſe make hony, or are any wayes beneficial to them, the Relator is ſilent; but being a general practice, it is more than probable that they are ſome way profitable.

Varro.

Great is the profit of Bees in ſome places, *Varro* reports of two brethren in *Spain*, who had left them by their father a little Farm-houſe, and about an Acre of ground which they repleniſhed with Bees, and ſeldome made leſs of their hony, than ten thouſand *Seſtertia* yearly, a prodigious, and I think unparelleld increaſe.

Menna a Hermite in the Province of the *Samnites*, had for his ſubſiſtence, only a few Hives of Bees, which when a *Longobard* thief had ſtoln, he was poſſeſt of the Devil, till *Menna* by his prayers freed him.

Heraclius

Heraclius the Emperour having Warre with the *Persians*, and wanting mony (the people being before impoverished by him, sent one *Nicetas* to *Alexander* the Patriarch to borrow of him the Treasures of that Church (as he did of others) who notwithstanding his refusal, carried away all he could finde but only one hundred pound of Gold; but while they were going away with it, there were certaine men that brought, as a Present, several Pots of Hony (which by a Miracle) to supply the Patriarks necessities, when they opened them they found all turned into Gold. Baron. annal. Eccles. t. 8

I subscribe not to some Papists, who pretend there is a Valfridus, great Majesty in their Holies (whole-lyes) from the burning of Waxen Candles, and that waxe candles for that purpose used, cannot without great Sacriledge be taken away. Strabus, lib. 2. in vita S. Galli.

A certaine Country-man stole a waxe candle from the Altar, and found it turned into a stony hardnesse, whereby melting, he acknowledged his guilt before many that stood by, and the waxe candle recovered his former softnesse. I might be large in such Legendary relations, but these are enough, if not too many.

CHAP. XXVI.

Observations Physical and Chyrurgical.

THe use of Hony with Bread to old folks makes them live long for it keeps and preserves all the senses sound and entire. It is reported that *Pythio* being asked by what means men might live long and healthy, answered, by anoynting their outward parts with Oyle, their inward parts with Hony. The fruit therefore of the Bees, saith *Ambrose*, is desired of all, and is equally sweet to Kings and Beggers; and it is not only pleasing to Princes, but also profitable and healthful, it sweetens their mouthes, cures their wounds, and conveies remedies to inward ulcers.

Democritus continued his life with the frequent eating of Hony; and bread with Hony was the *Pythagorians* meat.

Atheneus dipnosophist. l. 2. c. 3 Gorop. Becan Nilostop. lib. 3

Aristoxenus said, they might live long without Diseases who always fed of it at dinner.

Goropius commends the hony gathered of the Heath, before the *Spanish* hony gathered of *Ladanum*, and divers kindes of *Costus*, and that because it is sweeter, and not so hot as the hony gathered of Stechados and Thyme; it opens obstructions, attenuates gross and thick, cuts and cleanseth viscuous humours, and is especially profitable for those that are troubled with the spleen.

Pliny most of all commends that hony which the Bees gather in the Dogg-dayes, almost thirty dayes after the Solstice, for saith he, after the rising of every Starre, especially the greater ones, or the Raine-bow, if showers follow not, and there be a warme dew with the rayes of the Sun, Medicines, not hony are produced, heavenly gifts for the eyes, ulcers, and bowels, which if it be preserved, the Dogge-star being risen, and if by chance it fall out in the same day there be a rising of *Venus*, or *Jupiter*, or *Mercury*, there is no such sweetnes not vertue in the supposed heavenly Nectar, to keep Metals from Diseases, though otherwise deadly; but we have little of this in our Country, where the Hony-gathering is then almost finished, but that which is found in the lower parts of the combes, and some little that is not shut up with waxen covers.

Hony is hot and dry in the second degree, wherefore *Galen* forbids it such as were Hectical, have a Feaver, or the Jaundies, and young men; but commends it very much in cold effects, and prescribes it to such as had moyst stomacks, for moderately eating of it, it wonderfully nourisheth, and causeth both a good colour and constitution.

Hony with age or long boyling becomes bitter; it gives life to Wine when it is flat, Flowers, Fruites, and all simple and compound Medicines by mixture of it are preserved from putrefaction.

Hony corrupts by crumbes of Bread, and therefore they that sell hony, are carefull left children passing by dip their bread in it, and so it is transmuted into Ants, or little Creatures like them, if we beleeve *Paracelsus*.

Paracelsus. Hippocrat.

Hony mixt with other things nourisheth, and makes a good colour, but eaten alone attenuates rather than refresheth, for it pro-

provoketh urine, and purgeth too much.

Hony warmes and cleares Wounds and Ulcers, attenuates and diſcuſſeth excreſcencies in any part of the body. Galen & Avicen.

It is very effectual to produce hair in baldneſs, for Quotidian Agues, eſpecet oyle of hony diſtilled. Galen.

Diſtilled water of hony makes a ſmooth skin, provokes urine, diminiſheth heat in Feavers, eaſeth the obſtructions of the bowels, quencheth thirſt.

The ſalt of hony of all Corroſives is leaſt painful, and moſt energetical, and therefore in the fleſh of the yard by Chymicks, and expert Chyrurgians eſpecially commended.

The Epicures who chiefly ſtudied health and pleaſure, did eat continually *Ambroſia*, which conſiſted of a tenth part of honie, as *Tzetzes* reports, concluding that the daily uſe thereof would prevent griefs, and keep them free from Diſeaſes. Tzetzes.

Hony infuſed warme by it ſelf wonderfully helps, exulcerated ears, eſpecially if they caſt forth ill ſavours, as alſo their ſingings and inflammations. Galenus.

Hony, Butter, and Oyle of Roſes, of each a like quantity warme, helps the paine of the ears; he alſo commends Hony, and infants dung brayed together in the dulneſs of the ſight, and for white ſpots in the eyes. Marcellus Empyricus,

The rheume or droppings of the eyes in men or horſes are hereby helped, I have cured a Horſe ſtone blinde with Hony and Salt, and a little crock of a pot mixed, in leſs than three daies, it hath eaten off a tough filme, and the Horſe never complained after. Vigetius.

Hony wherein Bees are drowned, or Aſhes of the heads of Bees, with hony, clear the eyes; *Attick* hony, with the firſt dung of a young infant, and the milk of the Nurſe mingled together, and annoynt the eyes that are dull upon what occaſion ſoever, but firſt binde the party, for ſuch is the violence of the Medicine that he cannot otherwiſe patiently endure it, and the benefit is ſo forcible, that in the third day it wil make a clear ſight. Marcellus Empyricus.

Nothing is better for infants that breed Teeth, or in the Ulcers of the mouth than butter and hony; *Galen* preſcribes only the gums to be rub'd with it, for it conduceth wonderfully to the

generation, conservation, and whiteness of teeth: for difficulty of breathing, and to cause spitting, hony alone or mixed, is very availeable.

Hippocrat.

Hony boyled with Bees, or new Cheese, stayeth a looseness, helps the Bloudy-flux and Chollick. But before hony be used it is necessary to clarifie it; Thus, take of hony and fountaine water of each two pound, continually scum it as it ariseth, to the consumption of the water, afterwards clarifie it with the whites of twelve eggs.

Galenus & Celsus. Abynzoar.

Hony nourisheth not only because it is a kind of nourishment, but also because mixed with other things, it is a cause that they are more easily carried through the body; and he counsels old men to use it much, if they would have a care of their health, and live long without Diseases, and he affirms it by the examples of *Antiochus* the Phisitian, and *Telephus* the Grammarian, who were old men, and did eate *Attick* hony and bread; and *Galen* testifieth the same, with often eating hony boyled, seldome raw, and yet *Galen* forbids long, or too much boyling, because it will make it bitter.

Valleriola in locis com. lib. 3

Galen lib. 3. de sanitat tuend. c. 4. & c. 8

Celsus reckons up boyled hony among such things as stop a Lask, the reason is, because the acrimony by boyling is taken away, which is wont to move the belly, and to diminish the vertue of the food.

Cornelius Celsus, lib. 2. c. 3

The bodies of Bees taken newly from the Hives, and powdered, and drunk with Diuretick wine, powerfully cures the Dropsie, and breaks the Stone, opens the fountaines of urine, and heals and helps the stoppages in the bladder.

Bees drowned in hony, and so killed, stay vomitings, and are profitable for deafness.

Bees powdered cure the Wind-collick, mollifie hard ulcers in the lips, and also the Bloudy-flux.

Hony mixed with powdered Bees and so taken, is helpful for the crudities of the stomack, it is also good for the stomach.

Hollerius.

Pound Bees dead and dry in the combes, mingle them with hony, and annoynt bald places of the head, and the hairs wil spring afresh.

Galen in Euporistis.

The ashes of Bees ground with oyle, make hair white.

Erotis, c. 6. de morbis mulebr.

Take twelve or fourteen Bees powdered in any thing every morning, and it helps such whose retentive faculty is weak, in that they cannot hold their water.

Oxymel

Oxymel is made of water, vinegar, and hony, now water is mingled with it, that by long boyling that may be resolved or loosened which the windiness raiseth up, and that it may be more readily skimmed. In a word, that the working of the Medicine, by the mixing of water might be weaker, and more easily dispersed into the body, and hony is added to resist the flegme. Mesue.

One ounce of hony and vinegar mixed together ariseth a certain third faculty which was in neither of them before, which is most powerful and certaine to attenuate, cut, resolve thick and tough excrements, which have been bred a long time in the Stomack and Liver, and those that settle on the joynts, and cause lasting Agues.

It is made thus, take of vinegar one part, two parts hony, and twice as much water as hony; first, let the hony and water be boyled, and when they have been well skimmed put in the vinegar, and boyle them still, continually skimming them, let them boyle till there be an unity of qualities, and the vinegar be not raw, or crude, it is given from one ounce to three; *Galen* saith, if you will make it the stronger, adde as much vinegar as hony; it drives out thick and gross humours, and is profitable for the Sciatica, Falling-sickness, and the Gout; good also to gargarize with, in a Squinancy. Galen. lib. 4. de sanitat. tu. end.

Water distilled of hony four times by a Limbick, so that the hony were first boyled, makes beautiful hair, kills Lice and Nits; the hair wet therewith doth not only become yellow, but softer, and increaseth likewise, especially if it bee done in the Sun; it heals swollen or bloud-shotten eyes, and helps the hurt corners of the eyes, it is excellent for burnt places, most of all for such as are soft and tender, so that no scar will be left.

It must be distilled in a Glass Still, but first mixe with it pure and well washed Sand, and make a soft fire. The first water is cast away, the second is preserved, which hath a golden colour, and red at the last; the red purgeth out corruption in putrid wounds if they be washed with it, and a linnen cloth moystened in it, be laid upon them, and when it hath purged them, it produceth flesh.

Hony when it is distilling is wont to swell, and flow over when it grows hot, this is prevented when the distillation is performed by a woodden Sieve (made with hair) being

placed within the cover, so that it toucheth the hony.

Hieron. Rubeus, sect. 2. c. 8

Reubeus distilleth it otherwise, and adds other cautions: he saith, the water is with difficulty drawne out of the hony, because it readily as the fire grows hot, ascends to the top; wherefore some mingle glass with it, others sand, the most doe annoynt the Still within with oyle; but it is best distilled especially where they purpose to use the dregge, by wetting linnen cloathes in water continually, and spreading them on the head and sides of the Still, and a soft fire below, by which the swelling thereof is resisted, and leaving much vacuity and emptiness in the Still, so that it be filled a fifth, or at the most a fourth part; but because sometimes a larger fire is necessary, the cucurbite must be well crusted with clay. It is excellent for a Catarrh, Cough, Spleen, &c.

Andernacus dial. 7. com. 2

Oyle also is distilled out of hony, let hony in the combes bee put into an earthen vessel, and well macerated in warme Horse-dung, until the waxe being separated from the hony, swims aloft, which being taken off, let some Flint-stones be mingled with the hony, and little peeces of glass; the first water when it is distilled is very sharp, and then comes the oyle. It is singular for the Gout, and for the cure of all Wounds.

Aldr. lib. 1. de Insect.

Oyle of Waxe is thus made, let two pound of new odoriferous waxe be melted in a Frying-pan, and then poured out into a vessel filled with Muskadine, or other generous Wine, and let it continue there until it be cold, after taken out and squeezed well with your hands, and againe melted and poured into the Wine as before, and let it be seven times reiterated; and then let it be melted againe, and three handfuls of beaten Bricks put into it, let them be well mixed together, and being all cold, let them be put into a Glass Limbeck well stopt with clay, and the joynts well lined therewith, that there be no expiration; then let a little fire be made underneath until the Cytron phlegme ceaseth to run, and then let another vessel be set under, and the fire a little increased, until the drops be first thick, and then of a Cytron colour; and lastly, drop true oyle of waxe, and let this be received in a proper vessel, mixed with the thick droppings, and let it be made thick, and like butter congealed. And now the fire must be enlarged until thick drops doe againe distill, which as soon as you see let the vessel that receiveth the

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oyle bee removed, and another placed to receive the remainder.

Oyle of wax heals the cracks and chaps of the lips or paps, and hinder not the childe from sucking, and take off all superfluous excrescences by drying, and are especially good in cold griefes. It is good for them that are troubled with the stone, provokes urine, helps the Palsie, Sciatica, contracted nerves by anointing or drinking of it; kills worms of all sorts, helps the pain of the back, cures a distempered spleen, a drop injected into the nostrils opens their obstruction. It conserves the memory, confirms the brain, asswageth the Toothach, brings forth the dead or living childe, opens the veynes, frees the lungs from thick superfluities, with sirrup of Violets, helps the Asthmatick, cures running eyes, &c. Mizaldus appendix ad centurias.

Wax, saith *Galen*, after a sort, holds a middle of things that heat, cool, moisten, and dry, and hath some kinde of thick and stopping parts, and therefore it may seem not onely to dry, but by accident also perhaps to moisten, hindring perspirations; and therefore is the matter both of heating, and also cooling medicines, and although forbidden to bee taken inwardly, yet some make Pills of wax, and others mix it with other cosstives, and give it for a violent loosnes. Galen lib. 7. de simpl.

Dioscorides prescribes it in broth for ulcers of the bowels, for all wax saith hee, mollifies heats, moderately fills the bodies (which as *Dalechampius* expounds, produceth flesh) in hollow ulcers, and *Pliny* confirms the same. Dioscorid. l. 2. c. 76. Dalechamp. l. 22. c. 24.

New wax, and soft, saith *Galen*, is better than old, for medicines; yellow wax for the aery nature, doth mollifie, more loosen, and resolve the malady. And therefore new wax is often prescribed, for being often melted, it loseth the aery nature, is more earthly, and answers white wax: And white wax is most refrigerating, is most profitable for inflamed rains where the matter is to bee repelled, which yet, saith *Aldrovandus*, is neglected by practitioners in Physick.

There may bee admirable baths made of hony, which are excellent for Aches, and strong Itches, Mr. *Remnant* saith, that a friend of his had such a foul itch, that hee was like a Leper, whom hee thus cured: Mr. Remnant.

Hee took an empty Wine cask, called a Pipe, and took out one

one head, and made a liquor of water and hony, making it pretty strong with the hony, and heat it as hot as hee could endure to stand in it, and put it into the Pipe, and caused him to stand in it up to his neck a pretty while, and this hee did three dayes one after another, and hee was recovered as clear as ever. The like experience hee made for Aches. If they bee renewed with a little hony every day it will bee better.

Olao Magno hist. delle cose septentrion, l. 22. c. 16.

In the Northern Regions are few Physitians, but the healthfull aire, wholesome food, and especially their Mead are instead of the best physick.

Mead, the elder it is, being well boyled, some say, ten, or twelve years old, is most sovereign, and a present remedy for many diseases.

Butler Fem. Mon. part. 2.

Mead, or Hydromel is of two sorts, the weaker, and the stronger, Mead, and Metheglin.

For the making of Mead, if the Must, when it is altogether, bee not strong enough to bear an egg, the breadth of two pence above it, then put so much of your course hony into it, as will give it that strength, which is sufficient for ordinary Mead. And afterwards untill night, ever now and then stir it well about the tub: According to the quantity that you will make, so must you add a proportionable measure of hony and water, namely six of water for one. The learned Physitian *Lobel*, requireth this proportion of six to one to bee boyled to four. His receipt of Spices is Cinamon, Ginger, Pepper, Grains, Cloves, *ana* two drams. The second morning put to the Must the scum of the hony, stir all together, and stop the tub a little backward. When it hath setled an hour or two, draw it out to bee boyled. And when you see the grounds begin to come, stay and let the rest (save the very thick grounds, which cast to your Bees) run into some vessell by it self, which when it is setled, pour out into the boyling vessel through the clean sieve, and put out these grounds also into you garden.

Mathias de Lobel.

This Must being set over a gentle fire, when you see the scum gathered thick all over, and the bubbles at the side, begin to break it, having slacked the fire, to cease the boyling, skim it clean. Then presently make a fresh fire to it: And when you see the second scum ready, having slacked the fire again, take it quickly away; then make to it the third fire, and let it boyl in the

the wasting of a fourth part, if it bee made of the washing of combs; and to the wasting of one fifth or sixth part, if it be made of clean hony; not ceasing in the mean space to take off the scum as clean as you can. One hours boyling may suffice; but if the Mead bee of clean hony, it may as well bee done in half the time. Instead of twice slacking the fire, you may twice cool the boyling Must with cold Must reserved; or else bee sure that it do boyl all the while onely at one side, and not all over. After all this put in the Spices, *viz.* to a dozen gallons of the skimmed Must, Ginger one ounce, Cynamon half an ounce, Cloves, and Mace *ana* two drams, Pepper, and Grains, *ana* one dram, all gross beaten, the one half of each being sowed in a bag, the other loose, and so let it boyl a quarter of an hour more.

The end of boyling is throughly to incorporate the boom and the hony, and to purge out the dross, which being once done, any longer boyling is unprofitable, as diminishing more the quantity than increasing the strength and goodness of the Hydromel.

As soon as it is boyled enough, take it from the fire, and set it a cooling; the next day when it is setled, pour it through a hair sieve, or linnen bag into the tub (reserving still the Lees for the Bees) and there let it stand covered three or four dayes till it work, and let it work two daies. Then draw it through the tapwaze, and tun it into a barrel scalded with Bay-leaves, making the Spice-bag fast at the tap. If there remain much grounds, you may purifie them by boyling and skimming, as before; but this will never bee so good as the first, and therefore you may put it by it self, or with some remainder of the best, into a small vessel to spend first before it be soure. If the Mead bee not much, you may tun it the next day, and let it work in the barrel. Being tunned it will in time bee covered with a mother, which if by jogging the vessel, or by other means it bee broken, the Mead will turn sowre. But so will it make excellent vinegar, and the sooner, if it bee set in the Sun, which the longer you keep, the better it will bee.

Metheglin is the more generous or stronger *Hydromel*, for it bear-eth an egg the breadth of a groat or sixpence, and is usually made of finer hony, with a less proportion of water, namely four measures

for one; receiving also in the composition as well certain sweet, and wholesome herbs, as also a larger quantity of Spices, namely to every half barrel, or sixteen gallons of the skimmed Must, Eglantine, Marjerom, Rosemary, Time, Winter-savoury, *ana* half an ounce; and Ginger two ounces, Cynamon one ounce, Cloves, and Mace *ana* half an ounce, Pepper, Graines, *ana* two drams, the one half of each being bagged, the other boyled loose. So that whereas the ordinary Mead will scarce last half a year; good Metheglin the longer it is kept, the more delicate, and wholesome it will bee; and withall the clearer and brighter.

One excellent receit, I will here recite, and it is that which our renowned Queen of happy memory did so well like, that she would every year have a vessel of it.

First, Gather a bushel of Sweet-briar leaves, and a bushel of Time, half a bushel of Rosemary, and a peck of Bay-leaves; Seethe all these, being well washed, in a furnace of fair water; let them boyl the space of half an hour, or better; and then poure out all the water and herbs into a fat, and let it stand till it bee but milk-warm, than strain the water from the herbs, and take to every six gallons of water, one gallon of the finest honey, and put it into the boote, and labour it together half an hour; then let it stand two dayes, stirring it well twice or thrice each day. Then take the liquor and boyl it anew; and when it doth scethe, skim it as long as there remaineth any drosi. When it is clear, put it into the fat, as before, and there let it bee cooled. You must then have in readiness a tub of new Ale, or Beer, which as soon as you have emptied, suddenly whelm it upside down, and set it up again, and presently put in the Metheglin, and let it stand three dayes a working, and then tun it up in barrels, tying at every tap hole by a Pack-thred, a little bag of Cloves and Mace, to the value of an ounce. It must stand half a year before it bee drunk.

If you marvel that so great a quantity of water is required, it is partly because of the goodness of the hony, which being pure and fine, goeth further than ordinary; and partly that it may have the longer time in boyling, before it come to its strength, and therefore some will have eight parts of water to one of hony, but then they boil it so much the longer, The third part at least being wasted.

CHAP.

CHAP. XXVII.

Of divers kinds of Wild-Bees.

THere is one kind not half so bigge, as a Hony-Bee, with a bright shining green head and fore-part; she hath longer horns than a Hive-bee, she hath four wings, her neather part is of a light shining Carnation on the out-side, the belly of a greenish shining glistring colour, almost as bright as the shining of a Glo-worm, with a very large long sting (not forked) or somewhat like to a sting. I could not force it to enter it into my hand, whether it wil sting I know not; that which is equivalent to the skin is as it were continued without ringles; this Bee is very strong, gathers as the Hive-Bee sandaracha; and breeds in holes of old posts, divers near one another, we may call her the glistring Bee.

There is another sort of Wild-Bee which is very laborious, she is not so great as a Hive-Bee by a third part, but in shape and making altogether like her, the mouth opens side-ways, wherewith she holds very fast, like pinchers, her hinder leggs are of a tawny colour, the ringles of her hinder part gray, the rest of a blewish black, her fore-part is partly black, and partly gray, she useth to abide (if my memory deceive me not) in Brick-walls, in holes in the morter between the Bricks, many near one another; we may call her the Mortar-Bee.

There is another sort not half so great as the former, but prayer, she diggs or mines perpendicularly into stiffe clay ground in High-ways, or Foot-path sides, the earth that she works out, lyes round about her hole like the casting of a Worme, but much finer; after she hath entred three inches right down, she makes traverse holes one under another, sometimes two, sometimes three in breadth, as several cels, or chambers where she breeds her young, which are not Worms at first, but have a perfect shape of a Bee, herein concurring with the Queen-bee, and though she be laborious, and gathers much Bee-bread, yet could I never finde any thing provided before-hand, or laid up in any cell, but all is consumed by the young, of which I have found neer forty belonging to one down-right hole (not come to

maturity, and maintained by one) all in several cels or partitions one above another, the transverse holes being open to the down-right, that so they may be visited and fed by the breeding or Mother-Bee, which confirmes my former assertion of the old Bees feeding the young. This sort of Bee is very Political, living by hundreds, nay thousands near one another, but each in a distinct mansion, we call them the Earth-Bee.

There is another sort about the length of a Hive-Bee, but broader and greater made, like a small Humble-Bee, but differing in colour, she hath a round head, broad face, with long horns on the head, a ring of yellow turning upwards, above the mouth the chaps are indented, and hold like Pincers, the back and head are of a dark russet, six dew-clawed feet of a light browne, she hath four wings, her neather part is of a dark black, with five yellow spots on either side of the edges of every ringle, she hath a broad tayl; this kinde copulates often openly, while she is at work all the Summer; she purres, or darts too and fro as she gathers, without a Sting, makes a louder and clearer sound than the Hive-Bee.

There is also a smaller sort of this kind, in nothing differing but in the magnitude, these breed in clay-walls of houses and barns, in holes in the clay which they make many together, like several inhabitants to make a Town, but each hath her peculiar house, or hole.

There is another sort of wild Bee, altogether as long as a Hornet, but the neather part not above half so great; it hath eight ringles, the three next the incision of a shining black, the four next towards the tayl, which grow all less one then the other downwards, of a light Orange, and the tayl of a bright browne, the fore-part and wings (which are but two) and belly are of an Orange colour, the head not very round, the mouth piked, or like a Birds bill, but the lower chap longer than the upper, which opens not sidewaies as other Bees, but one over the other, two short horns on the head, but two wings orange coloured, somewhat shorter than the body, six dew-clawed feet of an Orange colour likewise, she buzzeth not so loud and smart as the Scarabee, she lives by foot-path sides, and base places of fields, of a quick sight, and not easily taken, without a sting, copulates frequently, feeds on Flies and Grashoppers, and

and this obſerve as a general rule, that few of thoſe ſorts that have but two wings gather Bee-bread; I might deſcribe divers others, but not being able to recite any particulars of them, I will not trouble the Reader any longer.

CHAP. XXVIII.

Of the Waſpe.

A Waſpe is a flying oblong Inſect with four wings, of a bright Aſh-colour, the two inmoſt neither half ſo long, nor ſo large as the out-moſt, ſix yellow dew-clawed feet mixed with Cheſnut-colour towards the extremities, two black moveable horns on the head, growing on either ſide as high as the top of the eyes, the head is black and hairy, the fore-head divided into three yellow ſpots, with a black ſtroke down the middle, the jaws yellow without, black at the mouth, the jaws hath not the ſolidity of a bone, but is like a ſtrong griſtle, indented like a Saw, the back is for the moſt part of a ſhining black, and the belly alſo, the neather part is a bright yellow in the ſcales, but black bars, in the opening of the upper ſcale, the black inlargeth it ſelf towards the middle of the ſcale; and laſtly, ſhe hath a venemous ſpear wherewith ſhe wil prick often (contrary to the Bee:) for it is not barbed.

The Waſpes Neſt is begun of one, not many mother Waſpes or breeders as ſome imagine; the mother Waſpes goe not abroad after they have bred many young, but are maintained by their poſterity at home; whether the old breeders continue longer than a yeat *Ariſtotle* queſtions, and *Scaliger* likewiſe, but determine not, it being a ſecret not then known; but it is apparent they continue no longer, for their wings are worn, and thereby are they diſabled for flight, much more for breeding.

The mother Waſpes have ſtings, and uſe them, and the reaſon of their abode at home, is not becauſe they are great and heavie bodied (as ſome) for their wings are proportionable to their bodies, but with their much working in the Spring, making their Neſts alone, breeding and feeding their young they wear

Ariſt. de hiſt. anim. lib. 9. c. 6.

their wings, and therefore after a while stirre not abroad, but order all at home.

The Waspes Nest is made for the most part in the ground, (sometimes in the thatch of a house) in a hole begun by a Mouse, or Mole, not very deep, about a foot and a half, sometimes two foot from the entrance, for the manner of their work, making of their combes, breeding and feeding, they doe almost wholly agree with the Hornet and the Bee, for Bees, Hornets, and Waspes are alike in all, as an Asse, Horse, and Oxe, and how Hornets breed, See *Cap.* 10. *pag.* 43.

Scalig. comment. in Arist. de hist. lib. 5. c. 19.

The Waspes Nest is made Oval, some consist of eight combes or stories one beneath another, fastned strongly by many peggs, or pins one to another, about three quarters of an inch distance between combe and combe, the middle combes are about nine inches in the Diameter, all round, and the whole involved with a five or six doubled folding, or watered cover, yet all wrought into one intire peece, consisting of the same matter with their combes, being greenish, russet, and gray, whereas the combes are of a dark russet, with only one hole through the middle of the cover, bigge enough for one Waspe to enter at once; the cover is fastned with some pins to the ground, or roots in the earth.

The middle of each combe is somewhat Piramidall, bending upwards, and hollower in the inside than the outward part of the combe, and the center hath a very strong pin to fasten it to the next combe, which runs like the axeltree or maine post through them all, and in less space than every inch in the whole breadth, are roves of pins, or pillasters, which fasten each combe very firmely to the next, so that they wil not easily be separated. And herein they seeme to have been exemplars of Architecture rather than Bees, fashioning all their combes orderly, strongly, usefully, and comely; the pins or props are framed broader & bigger, both at the top and bottome, than in the middle, with two or three buttereſſes both above and below, whereby they hold more strongly, and being small in the middle, less hinder their passage about the combes.

The Waspes combes are plaine on the upper part, but filled and furnished with hexangle cells downwards, the cells are not so deep, nor yet so long as the Bees, and they are not made straight,

ſtright but aſloop, that the young may not ſo readily fall out as they would if they were directly downwards.

The ſeed is at firſt almoſt as ſmall as a Muſtard-ſeed, of a dakiſh white, not ſpherical, but oval, and they faſten it not to the bottome of the cell (*ſed ad cellæ latus aptum more*, ſaith *Ariſtotle*) but to a corner or angle, a pretty diſtance above the bottome, and obſerve (for the moſt part) an exact order in diſpoſing of their ſeed, that they keep the ſame angles in every cell, not one in an angle of the South-ſide of a cell, and another in an angle of the North, or the Eaſt, but all in the South, ſo that the ſeed lyes orderly in rows: But if one layes her ſeed in the contrary angle (as ſometimes, though ſeldome) then the next takes it for a rule, and it is punctually obſerved perhaps through a whole range of cells. Ariſt. de hiſt. Animal. l. 5. c. 19.

This ſeed being hatched (for the manner how, ſee the tenth Chapter) grows a little while by vertue of the ſeminal power, it ſticks at one end, bending towards the middle of the cell, but ſomewhat erected (or rather dejected, for the head is downward) that it may receive food, and when it fills the breadth of the cell, it grows looſe, and falls (or to ſpeak properly aſcends) to the bottome of the cell, for the mouth of the cell is downwards raiſing it ſelf; and now the mouth of the worm begins to bee viſible, and it is daily fed, as wee noted of the Bees (for they are Inſects of the ſame nature) but ſomewhat degenerating; and *Pliny* ſaith, in *ſeru, eadem prope natura quæ apibus*, and grows to the full dimenſion of the cell: when as wee noted in the blomer, it grows dull and torpid, and refuſing meat is ſhut up by a cover wrought over the head: But to return back a little. Georgius Piſtorius.

At firſt, after the ſeed is hatched, it is oval towards the head, near to the tail there is a blackiſh ſpot; It will contract it ſelf almoſt round, ſometimes as a Caterpiller, when it moves, as if it would go, for indeed the worm makes no progreſſive motion.

If you break the worm, in the body is a thick wateriſh humour, with a harder ſubſtance, like a black liſt in the middle of it, and that from end to end.

The tranſmutation begins to bee firſt viſible in the ſuperior part, and the eyes are firſt diſcerned, and the Inciſion between the

the head and the shoulders; which yet as it grows more perfect, becomes smaller, the middle incision is scarcely visible, when the eyes may bee seen, then the legs, and the horns begin to bee framed, and the wings are last finished. When they are perfect, they thrust up the covers over their heads which hang at their backs until they come forth.

They excern an excrement while they feed, which is contained under them in the bottome of the cells, but assoon as the young eat their way forth, the older Waspes carry it out of the nest.

The young Waspes (though the combes bee taken out of their nests) that are shut up (not the other, for they must be fed, or they will dye in three or four dayes) will come to life, and perfection, although slowly, because of the small heat; but for above three weeks I have had them in a chamber successively come to perfection.

They gather no hony, that is, make it, rob they do, but that they spend it as fast as they get it, yet *Scaliger* saith mellificate, they begin to breed in the latter end of the Spring, contrary to *Aristotle*, who saith, they breed not in the Spring, but Autumn, whereas they miscarry by the end of Autumn.

Scaliger com. in Arist. de hist. l. 5 c. 19. Arist. in loc. pred.

They breed first their own kinde, and by the end of *August*, ordinarily have fledge Drones, which are about the greatness of an old working Wasp, but somewhat longer, whose covers they heighten above the combs when they shut them up, but the cells no greater than the Waspes.

The Drones have no sting, they have two testicles, which by crushing are easily discovered, and they are coated with a hard black tunicle, joyned together like a pair of breeches, sharpe towards the point, but broader upwards, and at the upper end not coated, but full of a whitish liquor; the testicles are somewhat like, but that they are united together to the young coates Grashoppers whilst they are in the dams belly.

The Drones are not of so bright a yellow as the Waspes, and their moveable horns are a great deal longer, yea longer than the mother Wasps horns, which they spread very wide like a fork, but not right forth, widening them by degrees, and towards the tops, bending them side-wayes.

Presently after they begin to breed Drones, they breed also mother Waspes, which are twice, nay almost thrice as great as the

the Drones, theſe begin to forſake the neaſt about a week in *September*, and ſo daily as they come to perfection, being firſt made prolifical by the Drones with whom they couple. The Drones continue in the neaſt, as long as the working Waſps, namely untill the wet, and cold in *October* puts a period to their lives. Whereas the mother Waſps, as ſoon as they have engendered, with the Drones flye forth, and ſhrowd themſelves in hollow trees, thatch, or ſuch like places, where they lye in a dead ſleep without feeding till *March*, when the firſt warm weather revives them, and cauſeth them to flye abroad, and then they feed, but if after they have been a while abroad, the Spring bee very cold and wet, they then for the moſt part, miſcarry, and dy.

For the mother Waſps, they make larger hexangle cells in the loweſt combs than for ordinary Waſps, and alſo inlarge the covers above the combs near a quarter of an inch higher than the comb, the covers and highings are very white like fine white paper.

The young Waſps are ſomewhat gray at firſt, and after turn to a bright yellow, and the Bees are more white at firſt, and after turn to a bright brown.

Ariſtotle doubted whether the Waſps loſt their ſtings in Winter; while they are in a deep, or dead ſleep, they exerciſe them not, but revive them by a fire, or in your warm hand, and you may experimentally affirm the contraty. That they did copulate, *Ariſtotle*; acknowledgeth, but whether the male and female, both had ſtings, hee profeſſeth that hee was ignorant. Ariſt. de hiſt. Animal. l. 9. c. 39.

Waſpes are a kinde of Canibals, for they rob from all, and eat not the Bees proviſion only, but the Bees themſelves, nay they will eat the young Waſps of another neaſt.

Waſpes are very ſtrong, and daring creatures, eſpecially neat their neaſt, not fearing to anger, nay to injury the moſt mighty. The Poet elegantly thus expreſſeth it. Spencers viſions of the worlds vanity.

A mighty Lion, Lord of all the wood,
Having his hunger throughly ſatisfi'd
With prey of beaſts, and ſpoyl of living blood
Safe in his dreadleſs den him thought to bide:

His sternness was his praise, his strength his pride,
And all his glory in his cruel claws:
I saw a Wasp that fiercely him defide,
And bad him battel even to his jawes.
Sore bee him stung, that it the blood forth drawes,
And his proud heart is filled with fretting ire,
In vain bee threats, his teeth, his tail, his pawes,
And from his bloody eyes doth sparkle fire.
That dead himself bee wisheth for despight,
So weakest may annoy the most of might.

CHAP. XXIX.

Of the Hornet.

A Hornet is a flying Insect, more than twice as great as a common Wasp, with four wings, the inmost smaller, and not so long as the utmost by a third part. For shape shee is like a Wasp, but differs in colour: All the back wings, and belly, legs and horns are of a bright Chesnut colour, and some part also below the division in the middle, and then yellow scales, and Chesnut-coloured openings, or bars with spots on either side of every yellow scale, on the upper-side but more Chesnut-coloured on the under-side. Her fore-head is of an iron colour, in the middle of her fore-head is a yellow spot like a heart, on either side whereof grows her moveable horns, on the out-side are her eyes oblong, and a little prominent, her face is a yellow square like a plate, her cheeks or jaws are yellow without, and black in the mouth; her jaws are a very bone indented like a saw, more thick toothed, and finer than a Grashoppers, contrary to *Aristotle*, and *Pliny* also, who affirm of all Insects, that they have no boniness in any part, whereas a Hornets jaw, and also a great Grashoppers, are a solid bone without, and within of an equal hardness.

Arist. de hist. animal. l. 4. c. 1.

Hornets have no fangs, their tongue is divided into small fibers: Their breathing is visible, cut off one of their heads, and you shall see (a while) an expulsion out of the neck of a whitish moisture, and then drawn in again, at first very strongly,

and

and then with more weakneſs, and at laſt ceaſing, yet life continuing in either part of the divided body above an hour.

A Hornets intrals is contracted in the body, but extended, is as long as the body, they have a very large cavitie in the end of the tail, out of the middle of it, the ſting is extended and drawn in alſo as they pleaſe, it is not hollow (as ſome think) that I could diſcern; near to the tail I found in diſſecting a Hornet (and never but once) a white egg as great as a lentill, and juſt ſuch a one as I have ſeen in the combs, but never diſſecting divers Bees, and Waſps could I finde any, nor yet in Hornets (excepting one) perhaps they are very ſmall (if at all) and quickly grown, and ſuddenly ejected.

Some ſuppoſe them to bee bred of a horſe: *Cardan* of dead Mules: *Virgil* of Aſſes: *Plutarch* of a rotten horſe; and ſo alſo ſome conceit Waſpes are bred, but with us they are bred for the moſt part by generation: Of their copulation *Ariſtotle* was ignorant, they breed moſt commonly in hollow trees, in thatch, or in houſes, in empty Bee-hives, rarely (but ſometimes) in the ground: For the manner of their breeding, ſee the tenth Chapter, and the former Chapter of Waſpes, with whom for the making of their combs, hatching and feeding their young, they do altogether agree, they are not ſo prolifical as the Waſps, for their combs are never larger, and the cells being much greater of neceſſity, they muſt breed fewer: Their ſtinging is very dangerous, but otherwiſe they are not ſo miſchievous as the Waſps, for though they ſometimes kill a Bee, yet they rob not the Hives, they feed on fleſh and fruits, and moſt of all of aſhen trees, feeding of the bark, making the boughs whiter, and in Autumn gather plentifully of the Ivy, contrary to *Ariſtotle*, and others, who aſſert, they gather of no flowers, and herein to differ both from Bees and Waſpes.

Cornel. Agrippa l. de occult. Philoſ. Ariſt. de hiſt. Animal. l. 9. c. 66.

They ſting dangerouſly, ſome creatures deadly. Dr. *Penny* reports, that being at *Peterborough* in a publick ſtreet of the City, hee ſaw a Hornet purſue a Sparrow, whom at laſt ſhee ſtruck with her ſting, and therewith preſently killed her, and filled her ſelf with the dead Sparrows blood, to the aſtoniſhment and wonder of many beholders.

Penn. apud Muſſeum de Inſect. l. 1. c. 9.

It is reported by *Ariſtotle*, as a ſtrange and almoſt incredible thing, of certain Mice in *Perſia*, which being diſſected, great

with young, those young not yet kindled, have been gravid, whereas in Hornets and Wasps there is a greater marvel, for the breeders coupling in Autumn, continue to bee prolifical in the Spring, and the young bred of them, not onely in the first, but in the third and fourth generation have a procreative power from their great Grand-mothers copulation.

Bil. ca. 17. p. 7. The water of distilled Hornets, or Wasps, or wherein they have been boyled, if it do but touch the skin, the place will swell so, that there will bee the symptomes of a dropsie, or poyson, or some great distemper; but Treacle drunk or annointed on the place, is a cure without any pain; with this Harlots and Beggars deceive the most circumspect and wary, as if they were with childe.

One thing more which I had almost forgot: If the hole in the tree wherein they breed bee large, when they bee numerous, they will work it up (all but a small passage for entrance) with the same matter whereof they make their combs.

CHAP. XXX.

Of the Humble-Bee.

THe Humble-Bee is of various magnitudes and colours, some greater, but shorter than a Hornet; others as little, but rounder and shorter than a Bee. All of them are very hairy, they have two horns, very strong indented jawes, wherewith they hold or bite very hard. Some have their heads cole-black, the upper part of the back yellow, the lower part black, they have four wings, the belly all black. In the nether part first a division or ringle of shining black without hair, then a ringle of pale yellow hairy, then a ringle of black, and so black to the taile, but thick and full of light gray hairs, that it seemeth gray, they hath six legs with scabrous feet. They carry their Bee-bread on their legs, as the Hony-Bee, but no wax, as *Scaliger*, *Pliny* and others, whether they carry the matter of their combs

Plin. Nat. hist. lib. 11. cap. 22.

combs on their thighs, I am not certain, but beleeve it, for they gather onely on flowers, but the Hornet and Waſpe carry it in their mouth.

They breed ſaith *Ariſtotle*, on the ground among ſtones, and have two or three entrances to their neaſt, but it is not ſo; but they breed either upon the ground, in the long graſs, moſt commonly in Meadowes, and ſpared layes, or elſe in a hole in the ground, much deeper than the Waſps: all their neaſt is covered; nay environed with moſs. Ariſt. de hiſt. Animal. l. 9. c. 67.

Ariſtotle and *Pliny* are very brief in the hiſtory of them, and therefore very obſcure; ſome imagine the reaſon hereof was becauſe their nature was well known, but I rather conclude, becauſe they knew little, or nothing of them. And it is very evident becauſe they confound the Silk-worms, and the Humble-Bees under the name Bombyx, and *Scaliger* alſo as it appears knew little of them. Scaliger Comment. in Ariſt. de hiſt. l. 9. c. 66.

The nethermoſt ringles of the black Humble-Bee, are as black as jeat, clear and ſhining; nay more tranſparent, for it will reflect an image, but the many long hairs, except it bee near at hand, nay in your hand, do ſomewhat obſcure it.

It ſeems they are very rare, and ſcarce known in *Italy*, for *Aldrovandus* glories in a neaſt of Humble-Bees that was found by his Apothecary gathering ſimples, and brought to him (as hee ſaith) not onely to delight him with a novelty, but to communicate as a ſecret of nature to poſterity. Aldrovand. de Inſectis, l. 1. c. 4.

Hee ſuppoſeth them a kinde of wilde Bee, and propounds it as a Query, whether *John Baptiſt* in the wilderneſs lived not with their hony?

Aldrovand. ſuppoſeth wax may bee had out of their combs; but this hee borowed from *Ariſtotle*, who ſaith, they make wax, but paler than Bees, but melt the combs, if you can. Ariſt. de hiſt. Animal. l. 5. c. 19.

Their combs are oblong cells as big as Acorns, but not altogether ſo long, cluſtering together (one ſomewhat higher than another, ſomewhat like a bunch of grapes inverted, ſixteen or eighteen joyning together (and then another like comb lying cloſe, but not faſtened to it, and

so another) of a dark yellow, which (after they have bred their young) they fill with Bee-bread, and some with hony; their hony is of a bright yellow, very sweet, but not so pleasant as the Bees, having a rank taste (occasionally) from the ground, their combes are not wax (as before) though gathered of the flowers, they are as tough brown paper, but not of so dark a colour, broken, they shew like *Japan* paper made of Cotton, woolley.

They ingender with their tayls opposite one to another, in the meane time resting on some plant, or the stump of a tree, they continue long in venery, and while they copulate, often clap their wings, and make a shrill noyse; their mates they chuse in the Nest, and are carried away by them. These as other Insects before described, after they have done breeding of Females, about the end of *August*, breed Drones for the propagation of their kind.

It is remarkable, that though the cels or pipes wherein they breed are of a like magnitude, yet the Humble-Bees in the same Nest are of various magnitudes, some more than twice as great as others, herein differing from Bees and Wasper, which continue in the same dimensions that they were first Metamorphosed into, only when they are strong and lusty, seeme somewhat fuller and plumper, but when they grow old, then they grow lank and wither; whereas the Humble-bees, many of them double their first magnitude.

They are very laborious and hardy Creatures, working in such weather when the Bees dare not, and continuing many weeks, after Hornets and Wasps are laid up, or miscarried.

There is another kind of great Humble-Bee, in the fore-part exactly agreeing with the former description, but the nether part is altogether of a shining black, and not so hairy as the former, it is sharp pointed at the tayl, and hath but one cavity, out of the which cometh a sting, which groweth out of the under part of the tayl, and is forked like a Snakes tongue, having two points forth-right, not barbed like a Bees, so that it stings more than once; there are two covers on either side of the sting to keep it close and safe, and these are as long as the sting, but bigger, rougher, and spreading on the top, I conceive to hold the

the ſting in, in the act of generation; there are ſix partitions or ringles on the neither part, and on the outſides, eſpecially of the fourth and fifth golden coloured hairs.

The Humble-Bee firſt deſcribed, affords ſome ſpecial rarities not obſerved by any, and therefore I muſt return to her again. In the tayl being opened, is a double cavity or hole, the one (if I miſtake not) for generation and parturition, and the other for the evacuation of excrements, in the neather part (diſſecting it) I found as in a Hive Bee, a bladder to which adjoyns the entral, not ſo white as in a honie-Bee, then you ſhall have (as I have often found) their young (but one viſible at once) which are not excluded, torpid, and liveleſs eggs, but live and grow in the dammes belly; I have found ſome as large as great Tares (like the Worms in the combes) ſo that all the parts of the Worme are very viſible, and theſe have lived after I have cut them out ſome houres, and would continually contract and gather themſelves into a round, and then again extend themſelves, but were not able to make any progreſſive motion, being without feet.

In the breaſt I perceived a little thing to pant, and beat a great while after I ſevered it from the lower part at the inciſion, when I after, opened the breaſt, I found four ſeveral parts like ſeveral members, but I was not able (my ſight being weak) to diſtinguiſh one member from another, but concluded there was a heart, liver, and lungs, all were reddiſh, but ſome parts were more red than others.

Under the horny tunicle of the eye is a white moyſture, and ſomething white likewiſe, like brains in the middle of the head; her tongue is drawn ſo cloſe, partly under her neck, and partly into her mouth, that it is ſcarcely viſible, but when ſhe works; being dead, I found it much longer than a Bees, as long as a barley corn; ſhe hath two fangs, on either ſide one, the tongue at the root is as great as a ſmall pin, underneath of a black colour to the middle, where it is divided into three parts, two ſhorter on either ſide, and a longer in the middle, ſo that it hath a triple tongue; this ſort that breed their young within them, are without a ſting; on their bellies near the roots of their wings, are little round reddiſh creatures, with very long horns, with ſix leggs, which run very quick and ſwift, which (I be-

leeve)

leeve) are a kinde of Lice proper to them; their taile stretched out, is very like their mouth, being as it were a complement of clawes meeting in a round, and this is proper to this kinde without a sting, which I therefore call the Claw-tailed Humble-Bee.

Those which breed a living creature within them, after a sort produce it egg-fashion, for it is covered with a thin membrane like the shell of an egg, but I discerned no such membrane encircling the worm in this Humble-Bee.

Arist. de generat. Animal. l. 3. c. 9.

This grey Humble-Bee in the taile is somewhat broad, and hath two circular horny claws, or pincers not visible, till they bee drawn out, and within them two other shorter but not circular.

Some creatures saith *Bodinus*, conceive eggs within them, and there hatch, and bring forth a living creature as the Viper, and all kinde of Whales, but neither hee, nor any other mentions this Humble-Bee.

Bodinus Theatrum natur. l. 3.

Whatsoever saith *Aristotle*, bringeth forth a living creature and not first an egge, hath breasts, and all that have breasts, have paps or nepples except the Dolphin, which hath two pipes, on either side one, which the young ones suck: The Philosopher, and *Scaliger* his Commentator, except not the Viper, nor the Slow-worm, because they perhaps concluded, that they hatched the young of analogical eggs within the dams belly; I am sure they ought to have excepted this kinde of Humble-Bee as also that Flye that wee spake of before out of *Scaliger*.

Arist. de hist. l. 2. c. 69

How they order their young after they bee excluded, I cannot yet determine, for I have not found any of their neasts, since I observed this particular.

The Cells or Pipes wherein the young are bred, are not flat at the top as the Bees and Waspes, but oval, and are all of one matter and colour, whereas the covers of the Wasps and Hornets are, though of the same substance, yet whiter and finer.

CHAP.

CHAP. XXXI.

Of the Grashopper.

IN the production of no creatures is nature more serious, or rather more wanton than in Grashoppers, who is able to describe their various colours? or the divers forms of their bodies, or can exactly report their walking, leaping, flying? With us some are green, some tawney, some russet, in *Ethiopia* red and yellow, in *Africa* white.

One hath written a Tractate of seven kinde of Locusts or Grashoppers according to the Scriptures, and Rabbins; and yet mentions, not those four kindes enumerated among clean creatures, and allowed the *Jews* for food, namely *Arbeth* a most prolifical kinde of Grashopper, which therefore had this name according to *Kimchi* and *Broughton*. The second kinde is *Solaam* by the Seventy, ἄττακον, *Hieron* calls it a Scarabee, but not rightly, for it is a swift creature, going on the four forefeet, and leaping with the two hindmost which are longer than the others. The third sort is *Chargol*, which in our Bible is translated a Beetle, but there is a great difference between Beetles and Grashoppers, the *Greeks*, translate it ὀφιόμαχον, for it fights with a Serpent, and strangles it, as both *Aristotle* and *Pliny* record; and *Maiolus* in his Colloquies tells us, That his Gardener returning from work, saw one of these Grashoppers conflicting with a Serpent, which at last it killed. And therefore *Niphus* was too bold to translate it a *Scolopendra*, or Aspe, when as the Philosopher calls it a Grashopper, and the Seventy translate it a Locust. The fourth kinde is called *Chagal*, the *Greeks* call it ἀττέλαβον. It is a cruel devourer, not onely consuming the fruits, but stalks, nay barks of trees.

In the Scripture wee finde five other kindes, *Gazam* from shaving, *Jelak* from licking, *Chasil* from destroying, *Thelatsal* from rust, which it occasions to the fruits, and *Chenagal* from staying, because it never willingly forsakes its place. *Modius* on *Joel*, and *Levit.* reckons up various kindes of the first sort called *Arbeth*.

Moreover in the month of *May*, out of a spittle that hangs upon

Fran. Stancarus de septem generibus locustæ

Levit. 11. 22.

Aristot. de hist. Animal. l. 9. c. 6.

Rhodulph Modius in Levit.

upon herbs is produced a green winged creature, in shape very like the little Grashopper, it leaps, and after flyes. Wee use to call the frothy matter wherein they are bred Wood-sear, that is the corruption of the woods; I know not the reason of the names; others call it Cuckow-spittle.

In *Norwey* it often raines a little four footed beast, as great as a Rat, of various coloured hair, which feeds of all green things like Grashoppers. When their food fails they dye, and the aire being corrupted with their stench, causeth to the inhabitants Megrims, and the Kings-evill. They call it *Lemmer*; this though not properly a Grashopper, yet like them very destructive.

Scaliger de Subtil. exercit. 192.

Of what form was the μελισσὶς of *Suidas*, the μυλακὶς of *Celius*, the μαλακὶς of *Nicander*, βρέντανα, ἄκρις, πεταλὶς, ἄρπαξ, θολωτρὸξ of *Hesiodus*, παρος of *Aristophanes*, μάσταξ of *Eustathius*, ἄλης and πυαλὶς, of *Phavorinus*, *Ludolphus*, of *Pisidore*, and many many others mentioned by authors differing one from another, but yet not fully described, much less their natures, so that wee need an *Oedipus* to reveal, and discover them.

A Grashopper hath two very moveable horns, as long as the whole body, on either side of the jawes two short ones; It hath two broad lips shutting flat on the other, and two lesser that shut side-wayes, all which together close the mouth, and the head, with the lips closed, somewhat resembles a horses head. It hath two round prominent eyes; *Nigidius* denied that they saw at all, as *Pliny* records, when as they have clear and glasse eyes, yet covered with a horny tunicle (the eyes are not moveable) there is a visible *Pupilla*, six feet, the hindmost as great, and as long again as the formost to leap withall, and raise it self up, with two joynts in every one, near their setting on to the breast, these two are very near one to the other. They have also a joynt in the middle, the upper part as the thigh greater at the top, and smaller downwards, and smoothe. The lower parts (which are their leggs) rough and scabrous, and several pliable joynts in the feet, and as it were visible toes, which are rough and dew-clawed. A long smooth taile more than half the length of the body, sharp-pointed, and two short little tents, or pricks growing near the end of the tail, pointing towards the extremity of it.

Plin. Nat. hist. l. 11. c. 37.

When

When you hold it by the wings, though it neither ſtirs, nor ſtrives, yet ſhall you both ſee and feel the whole body beat and pant, as alſo when it creeps, or ſtands ſtill, although not ſo much, leſt of all when it is in motion. It hath four large wings, but the under wings lye folded or doubled, which deceived *Willichius*, who unwarily beholding them, took them to bee ſeveral, and therefore publiſhed that they have ſix wings; the under wings being open, they are very fine and membranous, near an inch broad, ſpreading like a ſail; the upper wings are cruſty or ſhelly. Jodocus Willichius in two de Locuſtis dialogo.

It hath as it were, a ſcaly Gorget, from the head to the inciſion or back. The back is more hard and ſhelly than the belly, and hath ſeveral ſemicircular equidiſtant ſtrakes down to the belly. The belly is very ſoft and white on either ſide, all along to the tail, and green in the middle.

On the breaſt are ſharp pricks ſix in number according to the legs, againſt each leg one. When the head is ſevered from the body, the jawes, the lips, the horns, all move, but the head dyes ſooner than the reſt of the body. The body will leap a great while after the head is off. In the ſtomach is a thick juicy moiſture. The breaſt being opened, firſt appears the heart, and then other large members, one like the liver of a reddiſh colour, another leſs and grayer, which I ſuppoſe to bee the lungs. In the belly I have not found fewer than eighty young ones, in ſome one hundred. They grow quickly as great as Ant-eggs, and as long, they are firſt yellow and ſoft, full of a yellowiſh moiſture, then ruſſet, then of a tawny colour, when after a certain ſpace this ſofter tunicle hardens into a ſhining black coat, or ſhell, long and flattiſh, and theſe alterations are all in the ſame Graſhopper, for in ſome you ſhall finde all without coats, in others, ſome with coats, and ſome with none at the ſame time.

They have three black teeth in either jaw, the teeth and jaw are one peece, and of a bony ſubſtance. In the head is a manifeſt brain, or at leaſt ſomewhat equivalent.

Some Graſhoppers have not the long prick at the taile, but two ſtirt above and two ſhorter underneath, and ſome have ſtumps inſtead of wings, but howſoever they variouſly differ in their externals, yet in all that I have diſſected are alike, the vitals indeed and

other particulars, are not so visible in the smaller, as in the greater.

Grashoppers copulate after the manner of other Insects, the lesse ascending the greater; for the male is the lesser. They dis-
Arist. de hist. Animal. l. 5. c. 28. close their eggs on the earth, fastening a pipe which they have at their tail to it. The males have none: All lay their eggs together in one place, so that they make a kinde of combe, but not on the superficies of the earth, but a little underneath, then the form of them as they were first produced, being changed out of that earthy cover, appear little and black Grashoppers, and after the skin being broken on every side, they become greater, they bring forth their eggs in Autumn, and presently being delivered of them perish, for there breed certain worms about their necks which strangles them saith *Pliny*, which eat through them, saith *Scaliger*, and the males also dye; they are quickned, and come from under the earth in the Spring.

Grashoppers breed not much on mountainous, or squalid moist lands, but in Champion grounds which are apt to chap, for they lay their eggs in the chaps and cranies, out of which, Winter being past, in the beginning of the Summer following, of such eggs as are alive, come the Locusts or Grashoppers.

Fr. Valeriola. They copulate thus, the male ascending the female, puts in those two tants or pricks that are eminent in the end of the back, by turning back of the tail into the females womb, and they are very long and closely joyned together, that they can scarce be severed, neither yet by leaping or motion, nor yet without difficulty with your hands.

The female in her venery, moves her belly earnestly, and closeth in the lower part to the male, and holds him very long sometimes with the opening of her womb, sometimes with a strait shutting of it, making her dalliance more delightful; for while her womb opens, the male more deeply insinuates himself to the bottome of it, and when it is contracted, is more delighted with the pleasure of it.

There are seen two passages in the females privity severed each from other, and covered with a thick coat, it is black on the out-side, and hard and cartilaginous, but within somewhat rough and scabrous, with certain wrinkles. At the

bottome of this covering, the womb growing white, is like a womans privy parts. The male after copulation dyes; For by a long continued use of venery, they spend all their radical moysture and spirits also. The females after they have brought forth either by the violence of the pain, or multitude of their young, whereby their strength is consumed, perish likewise; or as *Aristotle* by little Lice which breed in their necks, and as *Pliny* saith, strangle them, as *Scaliger*, eat into them and kill them.

They flye over large Seas, continuing divers dayes together in their flight, and make such a noise with their wings, that they seem to bee Fowls, and shadow the very Sun.

They infest *Italy* oftentimes out of *Africa*, consuming all with their bitings, and with their black, sharp, and burning excrements, and with a sharp slaver, which they in eating let fall out of their mouths, yet are they not poyson, for both the *Parthians* and *Ethiopians* feed of them.

Willichius assigns them a King, and a Monarchy, but *Solomon* denies it, saying, *That they have no King, yet go they forth all by bands*, but though they bee *sine rege & lege*, yet have they a conspiring agreement to do mischief. Proverb. 30. 27

When they wasted *Gaul* 852. they marched in the aire twenty miles a day in an ordered battel, and formed squadrons, and when they fell on the earth they had their camps; the Commanders with a few went before the Army a dayes journy, as it were to finde out fit places to quarter in, and the very same hour that the fore-runners or harbingers came the day before, the whole Troups came the day after; before the rising of the Sun they stirred not from the place where they settled, but the Sun being risen, they marched, or flew away in their orderly Regiments.

Cuspinian observes the same, in the same Country, in the year 874, but with this difference, that they marched then but four or five miles a day. Cuspinianus.

Of Locusts there are sometimes seen such monstrous swarms in *Africa*, that in flying they intercept the Sun beams like a thick cloud. They devoure trees, leaves, fruits, and all green things growing out of the earth. I. Leo hist. of Africa l. 9.

At their departure they leave eggs behinde them, whereof

other young Locusts are bred, which in the places where they are left, will eat, and consume all things, even to the very bark of trees.

Scaliger exercitat. 192. Their coming is known by the discolouring of the fields long before, for they shine by reflexion.

Julius Obsequens. Before the birth of Christ, about a 170. years, the Pastures of *Italy*, were covered as it were with clouds of Grashoppers, and about *Capua* a hundred years together.

Paulus Orosius contra paganos, l. 5. c. 11. In the Consulship of *Marcus Plautius Hypsæus*, and *Marcus Fulvius Flaccus*, *Africa* scarce breathing from bloody wars, an horrible and extraordinary destruction ensued. For whereas now throughout all *Africa*, infinite multitudes of Locusts were gathered together, and had not onely quite devoured the corn on the ground, and consumed the herbs with part of their roots, and the leaves, and tender boughs of the trees, but had gnawn also the bitter bark, and dry wood, being with a violent and sudden winde hoisted aloft in mighty swarms, and carried along time in the aire, they were at length drowned in the *African* Ocean. Whose loathsome and putrified carkasses being by the waves of the Sea cast up in huge heaps far and wide along the shore, bred an incredible stinking and infectious smell: whereupon followed so general a pestilence of all living creatures that the corrupt bodies of fowls, cattel, and wilde beasts dissolved by the contagion of the aire, augmented the fury of the plague. But how great and extraordinary a death of men there was, I cannot but tremble to report: For in *Numidia* where *Micipsa* was then King, dyed fourscore thousand persons (in the Kingdom of *Massinissa* according to *Eutropius*, if I mistake not, eight hundred thousand.) And upon the Sea-coast next adjoyning to *Carthage* and *Utica*, above two hundred thousand are said to have perished. Yea in the City of *Utica* it self were by this means swept from the face of the earth thirty thousand brave souldiers, which were appointed to bee the Garrison for all *Africa*. And the destruction was so sudden and violent, that out of one gate of *Utica*, in one and the same day were carried above fifteen hundred dead corpses, of those lusty young gallants.

Georgius Cedrenus hist. Compend. In the Reign of *Basilius* the Emperor, the Eastern parts were consumed by Grashoppers, that the inhabitants were forced to

to ſell their children, and at laſt to paſs into *Thrace*. But afterwards a vehement winde carried them into the *Helleſpont*, where they were drowned and caſt up on the ſands which they covered, and prodigiouſly lived again of themſelves, and waſted all the Countries adjoyning, and *Thrace*, eſpecially three years together.

In *May* 1350. an innumerable multitude of Graſhoppers of an unwonted greatneſs, and uncertain original, appeared in the Province of *Catana* in *Sicilia*, which conſumed Corn, Vineyards, Woods, Gardens, and Trees, both domeſtick and wilde, and conſumed their barks to the very roots every where in one day, and then by a ſudden wind were carried into the *Jonian* Sea, and there drowned; but being after caſt upon the *Sicilian* ſhore, cauſed by their ſtink a cruell plague in *July* following. Fazellus de rebus ſiculis.

Swarms of Graſhoppers came out of *Africa* into *Italy*, and alſo into *France* 1353. and alſo 1374. cauſing ſuch a famine and plague, that the third part of the people periſhed, and they had moſt of them ſix wings, and at laſt were hurried with a violent winde into the Britiſh Ocean. Otho Friſingenſis.

About *Miſnia*, 1543. there were ſo many Graſhoppers that they covered the ground about a cubit thick. Jacobus Ekcelius.

In all the Dominions of *Prete Janni* is a very great and horrible Plague, which is an innumerable company of Locuſts, which eate and conſume all the Corn and Trees, and the number of theſe Creatures is ſo great, as it is incredible, and with their multitude they cover the earth, and fill the air in ſuch wiſe that it is a hard matter to be able to ſee the Sun; and if the damage which they doe were general through all the Provinces of *Prete Janni*, they would periſh with Famine, and it were impoſſible to inhabite the ſame, but one year they deſtroy one Province; ſometimes in two or three of theſe Provinces, and where ſoever they go, the Country remaineth more ruinate and deſtroyed, than if it had been ſet on fire. Fran. Alurez Ethiop. Hiſt. cap. 32. & 33.

Theſe Vermine are as great as a great Graſhopper, and have yellow wings, we know of their coming a day before, not becauſe we ſee them, but we know it by the Sun, which ſheweth his beams of a yellow colour, which is a ſigne that they draw near the Country, and the ground becoming yellow, through

through the light which reverberateth from their wings, whereupon the people become suddenly as dead men, saying, we are undone, for the Locusts come.

During our abode in the Towne of *Barua*, we saw the signe of the Sun, and the shadow of the earth, which was all yellow, whereat the people were half dead for sorrow; the next day, the number of these Vermine which came was incredible, covering four and twenty miles in compass.

At another time we travelled five daies journey, through places wholly wast and destroyed, wherein Millet had been sowne, which had stalks as great as those which we set in our Vineyards, and we saw them all broken and beaten downe, as if a Tempest had been there, and this the Locusts did; the trees were without leaves, and the barks of them were all devoured, and no grass was there to bee seen, for they had eaten up all thiggs, and if we had not carried Victuals with us, we and our cattel had perished.

This Country was all covered with Locusts without wings, and they told us, that those were the seed of them which had eaten up all, and that as soon as their wings were growne, they would seek after the old ones, and the number of them was infinite.

While we abode in a place called *Aquate*, at another time came such an infinite swarme of Locusts, as it is incredible to declare, they began to come about three of the clock in the afternoon, and ceased not till night, and as they came they lighted, and the next day in the morning they began to depart, so that by nine of the clock there was not one of them left, and the trees remained without leaves.

The same day and hour there came another squadron of them, and these left neither bough nor tree unpilled, and so they continued for the space of five daies, and they said they were young ones which went to seek the old ones, and they did the like, when wee saw them that were without wings, and the compass which these Locusts took, was nine miles, wherein was neither leaves, nor barks on the trees.

This Country seemed not to bee burnt up, but rather to be covered with snow, by reason of the whiteness of the trees, which were all pilled, so that all the Country remained bare.

At such times the people depart from their own Country, to that

that wee have found all the wayes full of men and women, travelling on foot with their children in their arms, and upon their heads, going into other Countries, where they might finde food, which was a pitiful thing to behold.

Once, *Eutropius* makes mention of great Locuſts, which were ſeen not far from the *Roman* Territory, ſo formidable, and ſuch devourers, that the inhabitants were frighted with the beholding of them, ſo that wee muſt conclude that theſe ſmall creatures have a chief place among Gods Troops and Armies. If *Pharaoh* ask, *Who is the Lord?* Not Angels, not Men, nor yet fierce Lions, and Tygers, but devouring Graſhoppers ſhall bee his challengers and conquerors, and ask, *Who is Pharaoh?* Eutropius l. 4.

They are all females if wee beleeve *Vincentius*, and *Albertus* as the *Scarabees* all males. Great droughts produce them, at leaſt cauſe a prodigious increaſe of them, 1553. after five years drought, were great Armies of them; And *Paulus Diaconus* reports that in the tenth year of *Mauritius* the Emperour after a great drought from *January* to *September*, there were infinite multitudes of Locuſts, which two years cauſed a great famine in *Italy*, by conſuming corn and fruits, and 1542. an innumerable multitude of Locuſts over-ſpread a great part of *Europe*, at firſt they wanted wings (being it ſeems produced by the drought) after they had two, and then four, and having waſted one place, went unto another, leaving a terrible ſtink after them whereſoever they had been, but at laſt with Autumns cold were deſtroyed. Vincentius. Cornelius Gemma.

Their extraordinary appearance is (accounted by ſome) a ſign of an approaching plague, ſometimes of war, for it is reported, that two Armies paſſing by *Clermont* into the *Romanick* Territory (a place in *France*) there fought together, where many of them were killed; when *Clotarius* was about to fight with his ſon *Chramnus*, whom overcoming, hee cauſed to be burnt with his wife and children. Hieron. Mercurialis. Georgius Turonenſis.

Theſe eaters are uſually eaten by the inhabitants of *Arabia deſerta*, and of *Lybia*, who eſteem their coming as a fortunate boading, for ſeething and drying them in the Sun, they bruiſe them to powder, and ſo eat them. Jo. Leo lib. 9.

And they were the food of *John Baptiſt* in the Deſart, yet there have been ſome, as *Theophylact* teſtifies, who underſtood

Theophilact. by ἀκρίδας, the buds or tops of certain herbs, or some kinde of wilde fruits, in which number was *Hermolaus Barbarus*, who saith *Chrysostome*, and *Athanasius* before him, were of the same judgement; but *Chrysostome* denies it, and saith a Locust is a small creature, between a flying, and a creeping; of which in the Desarts of *Judea* were great store, they were wont to boyle them in oyle, and they were the food of the poorer sort.

Hom. 2 in Marc.

August in Epist. ad Rom. *Augustine* confirms it also, that *John* fed of Locusts. And *Theopolact* witnesseth the same, who doth also interpret the eating of Locusts allegorically, as also *Origen*.

Adamnt. Origines, Diodorus, Siculus lib. 3. c. 3. Strabo. Geoprax. l. 16. Solinus poly hist. c. 43. *Diodorus* saith that the *Acridofagi*, or the *Ethiopians* bordering on the Desart that feed on Grashoppers, are of lower stature than other men, lean, and exceeding black; So also *Strabo*, and adds they are of a very short life, seldome exceeding forty.

And *Solinus* also takes notice that the borderers on *Mauritania* in a certain season (the Spring) gather great quantities of Locusts which they salt, and live hereof all the year, but none out-live forty years.

Scaliger exercitat. 192. The *Parthians* of old fed of them, as *Pliny* reports. And *Scaliger* saith, the *Syrians* and *Persians* eat them before they have wings, namely the young ones.

Hieron. Mercurialis lib. 2. var. lect. 20. It is to bee observed, that all Grashopper-eaters are of a short life: A learned Physitian enquiring what was the cause the people about the Red-sea are troubled with boyls on their legs and armes, demands if it bee from the aire, or the region, or their food, concludes peremptorily it was from their food. And

Diodorus l. 3. cap 3. *Diodorus* affirms that certain people with frequent eating of Locusts, were no onely short lived, but much anguished, and at last consumed not onely with boyls (mentioned before) but with a cruel kinde of winged lice, of which one gives a full relation.

Agatharsis. At the *Vernal equinox* when the South-west-winds blow from an uncertain place, an incredible number of great Locusts are brought, which in flying differ little from birds, but much in the shape of their bodies. With these Locusts salted and otherwayes prepared, the people live, they are excellent for foot-manship, but feeding of so dry nourishment, they live not beyond the fortieth year, for then they dye, if not before, a miserable death, for a certain kinde of winged lice is bred in their bodies, like unto

Dog-

Dog-flyes, but ſomewhat leſs. They begin at the breaſt and belly, and in a ſhort ſpace eat off all the skin of the face. Some of them are like Lepers, and grievouſly ſcratch themſelves, and the diſeaſe ſtill continuing, and theſe vermine increaſing, their humors are ſpent, and they extreamly tormented, till at length they bee killed and conſumed by them.

CHAP. XXXII.

Of American Bees.

IN the Weſt-Indies the Bees are ſmall, about the bigneſs of Flies, or ſomewhat greater, and the points of their wings cut overthwart, and have through the middle of the wing, one white line acroſs. They have no ſting. Goncalo Fernandes de Oviedo natural y general iſtoria de la Indias, c. 30.

They make great Hony-combs, and the holes in them are four times greater than the cells of our *European* Bees, although they be much ſmaller, their hony is good and wholeſome, but it is very dark, like wine being boyled.

In the Iſland of *Cozumel*, which is near the coaſt of *Jucatan*, there are many Hives of Bees like thoſe of *Spain*, but leſs, and much hony, and wax, the hony is like the *Spaniſh* hony, but ſomewhat ſharper. Rhamuſco vol. terzo delle Indie l. 17. c. 1.

In the Iſland of *Hiſpaniola* are no Bees, that ever I ſaw or heard of. In the firm land are very many, and of many kindes, as well as in the form and ſhape of the creature, as alſo in the variety of the taſte and colour of the hony, and difference of the wax. Goncalo Fern. de Oviedo della generale & naturale hiſtoria della India l. 15. c. 3. apud Rhamuſ. 3 vol. Purchas pilg. 3 part l. 5. c. 3. Jo. Acoſt. l. 4. c. 34.

But though *Oviedo* neither ſaw nor heard of any, yet are there Bees in *Hiſpaniola*, but as ſmall as Flies, which ſting not; their hives are four times as great as ours, their hony is white.

In the *Indies* are few ſwarms of Bees (hee underſtands domeſtick Bees, which then were rare, but now in many places common.

Their Hony-combes are found in trees, or under the ground, and not in Hives as in *Caſtile*. The Hony-combes, which I have ſeen in the Province of *Charcas*, which they call *Chiguanas* are of a gray colour, and have little juice, and are more like unto

sweet straw, than to Hony-combes. The Bees are little like, unto Flyes, the hony is sharp and black, yet in some places there is better, and the combs better fashioned, as in the Province of *Tucuman* in *Chili*, and in *Carthagene*.

Cronica del Peru per Pedro de Cieca, c. 25

In *Peru*, especially about the City *Cartago*, are many Bees, which breed in hollow Trees, and make as good Hony as the Bees in *Spaine*; there is one sort of Bees not much greater than Gnats, these stop up the hole, or passage into the cavity of the tree, and by a pipe of waxe as great as the middle finger, goe in and out to their labours, their Hony is thin and somewhat sharp, they get usually about a quart of hony out of a tree.

There is another sort of Bees which are somewhat greater, and black (for the former are white) the entrance into the tree where they work is made up (except a passage for them) with waxe, and some other mixture, whereby it is harder than a stone, their hony is without comparison better than the former, and a Tree will afford usually a gallon, and sometimes more.

There is another sort of Bees which are greater than the *Spanish* Bees, but none of them sting, but when they finde that any goe about to plunder them, they will charge upon him that cuts the tree, and hang about his hair and beard; these greater Bees yeeld usually three gallons out of a tree, and it is farre better hony than any of the former.

Ant. D'Herera Historia general de los hechos, &c. decad. 5. lib. 10. c. 10.

In the Province of *Guayaquil*, which is not farre from *Quito*, they breed in Trees, and are not much greater than Flies, the Waxe and the Hony which they gather is red, and although it hath a good taste, yet is it not like to the Hony of *Castile*.

Maximil. Transilvanus in Epist. ad Episcop. Salisburg.

Near the Rivers of *Vasses* and *Plate*, the Bees are not like ours, being not greater than the small Flies wherewith wee are troubled in Summer; they work in Trees, and make larger combes than ours, the extremities of their wings are blunt, as if they were cut (*Oviedo* and *Thevet* confirm it) or bitten off, and have in the middle of them a cross spot drawing towards white, without stings, their wax is as black as pitch. The hony generally of the Bees, of the new world, candies not, but is alwayes liquid like oyl.

Huldrichus Smidel.

The Country of *Mackasiet* 372. *Germane* miles from the City of *Assumption* in the River of *Plate* (near *Peru*) is so abundant

abundant in Bees, that you shall scarce open any tree with a hatchet, where will not run out five or six measures of pure hony; the Bees that make it are very little, and without stings.

Aldrovandus citing *Hispanus* saith, that in the Isle of *Cumana*, the swarms hang on the Trees, and flow down with hony. Petrus Hispanus.

In *Tymana*, not far from *Quito*, the *Indians* make many conserves of hony, which is somewhat plentifull with them, and send them to sell to the Countries round about them. A. d'Herrera de las Indias occid decad. 6. l. 3. c. 16.

The *Indians* of *Cumana*, although their Country bee well repleniſhed, with good bread, corn, fruits, and all kinde of fiſh in great abundance, yet eat Bees, Lice, Spiders, *&c.* Linſcoten. l. 3.

The *Braſilian* Bees are very unlike to ours, and differ not much from the little black fleſh Flye, which annoy us in Summer, and make their combs uſually in hollow trees; they call the hony *Yra*, which they eat as wee do, their wax is as black as pitch, which they call *Yetic*, they uſe it not for candles, as wee do, but to ſtop their great Canes, wherein they keep their feathers that they bee not eaten by a kinde of Butter-flye, which they call *Arovers*. They come in multitudes to the fire, like Crickets, where they eat whatſoever they finde, eſpecially they gnaw the upper part of leathern doublets, and ſhooes. If wee negligently reſerved hens, or other food, in the morning, wee ſhould have onely bones. Hiſt. Navigat. in Braſil. Lerius.

Several ſorts of Bees in *Braſile*: Yeatee is the ſmalleſt of all the Bees that ever I have ſeen in the Country, and is in making much like a gnat, but of a yellowiſh colour, and hath commonly her hony in the hollow of a tree, either at the root, or not above three or four foot from it; it ſtingeth not, and where they enter, they make a pipe of yellowiſh wax about four inches long, with the mouth of it, like to the mouth of a Trumpet, the combs are joyned together like cluſters of Nuts, and their hony is an excellent baſſome, for I have had experience of it my ſelf for the curing of very dangerous green wounds. Mr. Joh. Stanes my friend, and neighbour who lived many years in Braſil.

Zellab, and *Zellobſon* are the two chief ſorts of Bees, and ſting not at all; the leſſer is ſo like our Bees here in *England*, that I think I ſhould not know one from the other, the other is bigger, but yet much of the ſame colour; they have honey in abundance, and the further up into the Country the more plenty; I have

ſeen more taken out of a tree at a time than a Firkin will hold, as clear as running water, but if drunken, it is exceeding ſtrong, and cauſeth thirſt, it muſt bee taken very moderately. They build moſt commonly in ſome hollow bough of the tree, or elſe in the body of a tree, called by the *Indians Keranvah*, they have their hony in cluſters of balls, much like our Humble-Bees, and their young ones in combes which lye compaſſed with the balls of hony, and in the balls you ſhall find ſome hony as it is new brought in, very thick and dry, but taſte it, it is very ſoure, and ſo ſome more near ripe, but not fit to eat, untill it come to be clear as water; you may ſee in the balls or cluſters, the colour of the bloſſome from whence it was gathered.

There are two other ſorts of Bees that are but ſmall, and of a black colour, one ſort ſtingeth not, but the other doth; they are very like each to other, and build about the middle of the tree, the hony of them both is much alike, but not ſo good as the former, being of a darker colour, and their combes are in manner with the former, and they are called *Ereve*.

There are other ſorts of black Bees called *Erepnob* and *Erepnobuſon*, they both ſting, and intangle much in a mans hair, the one buildeth in the hollow of a tree, and the other in the branches, that which buildeth in the hollow of a tree, will not ſuffer any man to come within two or three rods of the tree where they are.

I never ſaw any of their hony, but the natives have told me, that they have indifferent ſtore, but it is very laxative, and breedeth diſeaſes in the eater, as bloody fluxes, &c. the other buildeth in the branches, and make their houſe of dirt, bigger than one of our large Bee-hives, and enter at the middle of it, their young are as it were, in little cells or chambers, and from thence between ſeveral layings of dirt, they have their hony, which is not very much, but is binding.

There is another ſmall ſort of Bees, and they either build in fields, where there are but ſmall ſtore of trees, and they low ones; they are of an aſhy colour, and build in the branches like *Erepnobs*, but their neſt is like a film, or skin, and of the colour of the Bee, they have not much hony, and have a thin flat combe, or elſe they build among the Tobacoes, and from thence they take their name, being called *Tobacova*.

In

In *Hiſpaniola* their Waſps are greater than ours, and ſting more dangerouſly. There are many of them, and they very poyſonfull, they cauſe great pain when they ſting, they are like thoſe of *Caſtile*, but ſomewhat greater, and under their wings above the yellow towards the end, have a little Lion-like colour. More fully in another place, hee ſaith, There are many Waſps in the Weſt-Indies. They are very hurtfull and venemous, and their ſtinging is without compariſon, more painfull than the ſtinging of *Spaniſh* Waſps, they are almoſt of the ſame colour, but greater, and the yellow of them is more red, and their wings are ſpotted with a black colour, and the points of them reddiſh of a buffe colour. Purchas Pilg. 3. part l. 5. c. 3. Oviedo l. 15. c. 3.

They make very great neſts, and the cluſters of their combs are as large as the combs that the Bees make in *Spain*, but they are dry and white inclining to ruſſet, they have nothing in them but their young: They breed in trees, and alſo in the roofs and timbers of houſes. Oviedo. Sumario de la natural y general iſtoria de las Indias c. 49.

There are many Hornets in *Hiſpaniola*, and their ſtinging more torments, than the ſtinging of their Waſps.

There are two ſorts of Hornets in *Braſile*, which the *Indians* call *Marimonaas*, the one black, and the other much of the colour of them wee have here in *England*, but the black is bigger and longer, and ſtingeth violently. They make their houſe like a Canopy, or much like to the top of a Bee-hive, and they are faſtened to a bough of a very high tree; ſo that they ſeldome offend any man, unleſs they firſt offend them; but your herdſmen are ſometimes much vexed with them, in driving their cattel, they are unruly many times, they run among ſome Sippoes or Withes that run into the tree, whereby they diſturb them, and then they come down to the terror of men and beaſts. Their houſe is open below, ſo that you may ſtand under them, and ſee them go into a comb that lyeth flat at the bottome, much like to our Hony-comb. Ramuſio l. 3. c. 3. torzo Vol. Mr. John Stanes.

FINIS.

Books lately Printed for *Thomas Parkhurst*, at the Sign of the Three Crowns, over against the Great Conduit, at the lower end of Cheapside.

A Learned Commentary, or Expoſition upon the firſt Chapter of the ſecond Epiſtle to the *Corinthians*, by Dr. *Richard Sibbs*, publiſhed for publick good by *Thomas Manſon*, Folio.

There is newly come forth Mr. *William Fenner* his Continuation of Chriſts Alarm to Drowſie Saints, with a Treatiſe of Effectual Calling: The Killing Power of the Law: The Spiritual Watch: New Birth: A Chriſtians ingrafting into Chriſt: A Treatiſe on the Sabbath, which were never before printed, bound in one Volume, *Fol.* and may bee had alone of them that have his other Works, as well as bound with all his former Works, which are now newly Printed in the ſame Volume with this.

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The Journal or Diary of a thankful Chriſtian, wherein is contained Directions, for the right method of keeping and uſing according to the Rules of Practiſe; a Day-book of National and publick, perſonal and private paſſages of Gods Providence, to help Chriſtians to thankfulneſs, and experience. By *John Beadle*, Miniſter of the Goſpel at *Barſtone* in *Eſſex*, large 8°.

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Book of Emblems, with Latine and Engliſh verſes made upon (*Lights*) by *Robert Farly*, ſmall 8°.

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Peoples Need of a Living Paſtor, at the Funeral of Mr. *John Froſt*, M.A. by Mr. *Zach. Croſton*.

A Treatiſe againſt the Toleration of all Religions. By Mr. *Thomas Edwards*.

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Meditations and Observations, Theologicall and Morall, in three Centries, upon the nature of Bees.

The first Centry.

THere is no creature but may teach a good ſoule one ſtep towards his Creator. Wee ought therefore to make a ſpirituall uſe of things naturall, and the things of this preſent life, by them raiſing up our mindes to heavenly meditations, and in an holy alchimie (as one ſaith) draw gold out of lead, heaven out of earth, grace out of nature. The world is a glaſſe wherein we may contemplate the eternall power and majeſtie of God; For the inviſible things of him from the creation of the world are clearely ſeene, being underſtood by the things that are made even his eternall power and God-head. It is that great booke of ſo large a character, that a man may run and read it, yea even the ſimpleſt man that cannot read, may yet ſpell out of this booke that there is a God. Every ſhepheard hath this Calender, and every ploughman this *A, B, C.* What the *French* Poet divinely ſung is thus as ſweetly Engliſhed. Rom. 1. 20. *J. Silveſter.*

The worlds a ſchoole wherein a generall ſtory,
God alwayes reads dumb lectures of his glory.

A ſhame therefore for us to have earthly hearts voyd of ſpi-

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rituall meditation, when every creature every where yeelds us matter enough. All of us can uſe the creatures carnally, and ſo can beaſts; the ſpirituall uſe is rare.

II.

God humbles us with ignorance in many things, not only divine but naturall and in common uſe, as in the Loadſtones drawing of iron. In that little fiſh the *Remora*, the ſtay-ſhip that will arreſt a ſhip when it is going full ſaile. In the nature of Bees how blind are we? notwithſtanding all our obſervation and labour. In the production and continuance of the Queene Bee, in the generation of other Bees, and generally in the formes of all things. A juſt puniſhment of our pride, in affecting and aſpiring to knowledge too high for us. And if there be in nature ſuch ſecrets, what then in grace? Let us not be too curious in prying into Gods arke, leaſt we ſmart like the flie fluttering about the candle, for God is a conſuming fire to thoſe that will be ſporting themſelves in the quirks of their wit about his ſacred myſteries. Let us waite till the life to come, and the veile ſhall be taken from our eyes, in the meane time humble ignorance is better then proud curioſitie.

D. Dike Evangel. hiſtories.

III.

Many have troubled themſelves and others to diſcover the ſeverall kinds of working Bees, whereas of working Bees in theſe parts of the world, there is but one ſort. And all Bees agree, if not in a juſt magnitude, colour, and proportion, yet certainly, in their operations, naturall diſpoſitions and inclinations; So that our Bees and Bees in *Spaine* and other parts make all their combes with like hexangle cels, and are all induſtrious to gather honey, although in ſome parts according to the Climate they are more retarded from working then in others.

And all the Saints that are diſperſed throughout the whole world, have the ſame nature in them (although there be externall differences) they have the ſame ſpirit in them, though they be never ſo remote one from another, & never ſaw one anothers face, yet may they know one anothers mindes, for one mind dwels

dwels in them. And when one mind dwels in diverſe, they be of the ſame diſpoſition, one nature is common to them all.

IV.

Waſpes labour not as the Bees to furniſh themſelves with proviſion for the future, but for the moſt part live on ſpoyle and rapine; and about this are as indefatigably diligent and earneſt early and late, as the painfull Bees in their profitable labours. So it is with many in the State, who in unlawfull callings, and in the maintenance of their unlawfull trades doe take as much paines, nay more then ſome in lawfull. *Demetrius* his example ſhewes it, *Act.* 19 and the Proverb is, *The belly hath no eares.*

V.

Many creatures have retireing places; the Bees when winter, night, or ſtormes approach, they have their hives or dwellings in trees, they have their hideing places. Onely a wicked careleſſe man that hath not acquainted himſelfe with God, when troubles come he hath no hideing place, nor no abiding place, but lies open to the ſtorme of Gods diſpleaſure; therefore he is ſurprized with feares and cares, and pulled in pieces with diſtractions: he is a Meteor that hangs in the clouds, he cannot tell which way to fall.

Dr. *Sibbs*, The poore mans riches.

VI.

Bees are laborious and induſtrious in their youth, and yet diſpenſe not with themſelves to be idle in their age, but as their skill is increaſed by dayly practiſe, ſo doe they with inceſſant diligence follow their buſineſſe, and that in the moſt difficult and laborious taskes, being more early at their worke then the younger; and in chilling ayers when they dare not venture forth, will they be abroad, nay when they are weake, and have over-ſpent bodies and ragged winges, yet will they be abroad, although they miſcarry in their labours. How different is the practice of the men of the world? where a new broome ſweepes

Dr. Dike, Evangel. Historics.

cleane. Their first beginnings are goodly and glorious; but the end is not answerable. Many are hot professors and zealous in their younger yeares, but grow key-cold in their elder yeares; therefore *Eccles.* 7. *The end is better then the beginning.* This deceitfulnesse of men is also in their speciall callings. Many good Magistrates at the first, as *Saul*; and Ministers, as *Judas*; but they are best at first, like *Nebuchadnezzar* image, a golden head, and iron and clayie feete.

VII.

Dr. Preston, Gods All sufficiency.

If a man did finde an all-sufficiency in God, he would never turne from him, nor seeke to the creature; Even as the Bee, if it did finde honey enough in one flower, would not hasten to another; but because it doth not, it goes from flower to flower. And so is the nature of man, as *Solomon* expresseth it, saying, *that he hastened to outward things*, that is, when he fell upon one, he found not enough in it, he made hast to another, and to another. So the nature of man [illegible] did find sweetnesse and comfort and contentment enough in God, it would not turne from him to the creature, but because in his sense the object is too narrow, there is somewhat he would have more, he lookes over the Pale as it were, he seeth something he desireth, and that causeth him to step out.

VIII.

Bees will endure Waspes abroad, or in other hives, but never willingly in their owne; for antipathie is a perpetuall enmitie. If the force of antipathie prevaile so farre to make an irreconcileable hatred, as great should be our hatred against sinners and Gods dishonour. It is fearefull when we can easily comport with the wicked and digest their company and societie.

IX.

Bees when they are weary of the drones, having no further use of them; and fearing prejudice and future want by their gourmandizing; at first shew their dislike by molesting and tron-

troubling of them, but when this will not cause them to depart, nor yet give over their wonted courses, then with courage and confidence doe they set upon them, confront, kill, and slay them. Teaching Christians according to their places, that it is not enough to dislike the doings and practises of the wicked, but they must, having reproved them, confront & oppose them, nay strive, contend, and warre with them! Many faintly and coldly shew their dislike against wicked men, as *Eli* against his wicked sonnes: But this is (to use *Sophocles* his comparison) as if in a festered wound or sore, the Chirurgion should only blow upon it with his mouth, whereas there must be cutting, lancing, searching, burning, and the greatest violence that can be. *Asa* was herein famous for not enduring his owne mother in her Idolatry. 2 *Chro.* 15. 16.

X.

If the Queene Bee in a swarme, following after the company (but because of the weakenesse of her wings, or tendernesse of her constitution, being never abroad before, and so not able at first to endure the cooler ayre) fall downe; they that be her present attendants, and saw her fall, stoop with her, encircle her, (and if she rise not and returne to the hive, or goe to the maine body of the swarme, (settled perhaps a little distance with longing and trembling expectation of her presence) stay with her and starve with her rather then forsake her, contenting themselves with the condition of their Leader. And shall afflictions be the way that the Master enters into glory, and the members find fault with them? shall the head be crowned with thornes, and the members wrapped in softnesse? this is an unhandsome indecency, and a disunion too neare an antipathie; who ever will be Christs Disciple, must take up his crosse, deny himselfe, his owne fonder appetites, and trace his Masters foot-steps, though marked out with blood that he shed for our redemption; for he that will save his life shall loose it, and he that will loose it shall save it to eternitie.

XI.

Put a drop of honey into a bottle of Vinegar, it is as sharpe as

Dr. *T. Taylor*, Parable of the Sower.

as before; so drop in the sweet word of God into such an heart as is sowred with the world, the tast is not changed, the word is not over-mastered.

XII.

Bees for the most part feed on honey, which over-liberally eaten turnes to choller, no wonder then if they be fiery furious and chollerick creatures: There is a power in meates to assimilate those that eate them, what we feed on we are oft like unto: feed on grosse meates, your spirits will be more grosse and dull, feed on light meates, your spirits will be more quicke and agill: so if a man feedes on the world, he can relliſh nothing but the world, his spirit is made carnall and stupid and worldly, and can rise no higher, therefore when *Solomon* gave himselfe to seeke pleasures, to try what was in them, though he did not neglect wisdome, as *Eccles.* 1.8. yet he found by experience, deale as wisely as he could, in the end they did so stupifie him, that he was led away by them to Idolatry. Then is a man become stupid when he is serious about trifles, and trifling about serious things: by pursuit of these his judgement was quicke in earthly matters, but in matters of religion, he began to grow very weak and ignorant; how much more then they that wholly give themselves to the lusts and pleasures of the world?

Mr. *Cotton* expos. on the first Epist of *Joh.* c.2.v.17.

Eccles. 2.3.

1 Kings 11.4.

XIII.

Bees in violent frosts are torpid and stirre not, especially in the Northerne regions, where they are almost all winter, if not in a dead, yet a very deep sleepe, but the mighty power of God in the returne of the spring revives and quickens them. And it is not a lesse almighty power that keepes the life of grace in the greatest falls and temptations of the Saints, that keepes life in *David* and *Peter*, that it should quicken and revive againe when the Sun of righteousnesse with comforting beames refresheth and warmeth them.

XIV.

Bats are patient and harmlesse creatures, and seldome unprovoked

provoked prove injurious; but he that shall often stand before the hives in the heate of the day, when they returne home with their labours, may too late repent his temeritie and fool-hardinesse. Lawfull libertie used to the full is exceeding dangerous, he that will take all the libertie he may, will sometimes take that he may not. It is not safe at all times to goe into the high Priests hall. We are oft mistaken in our judgements concerning the lawfullnesse or unlawfullnesse of actions; He that will doe all that he thinkes he may lawfully doe, if he increase in giving himselfe libertie, will quickly arrive at doeing things unlawfull. He that because a man may be innocently angry, will never refraine his passion, in a little time will be intemperate in his anger, and mistake both his object and the degree. Thus facetiousnesse and urbanitie intertained with an open hand, will turne into jestings that are uncomely. If you will be secure, remove your tent, dwell further off, God hath given us more libertie then we may safely use.

Dr. *Taylor*, The great Exemplar.

XV.

Let Bees be kept close and imprisoned in their hives, though they have ease and ayre in abundance, yet they will not be contented, but still complaine and murmer, gnawing and eating away the stopping and impediments, that they may apply themselves to their naturall and delightfull labours: so a river let it be dammed and stopt up, yet if the course of it be naturall to goe downwards, at length it will over-beare the damme and run over. Let water that is sweete be made brackish, by the overflowing of salt water, yet because naturally it is sweete, it will in time worke out the saltnesse. Here we have a picture of every mans nature, looke what the constant streame of his disposition is, that which is naturall to him, though he may be pent up and hindred from the practice of it for a time, yet will he breake through all impediments that he may be at it, though some temptations may forcibly breake in, and barre and stop up for a time his walking heaven-ward, yet will he never be at rest, untill he hath removed them, and got into his former course againe; whereas if a wicked man step into a good course by some tryall, or good education, &c. yet long he will not hold

hold in it, he will breake through the impediment, becauſe his naturall diſpoſition, the ſtreame of his heart runs another way.

XVI.

Bees will not be without a Leader, for in all they act they receive directions from the Queene Bee. As the governour of a ſhip, he hath his hand (ſometimes) to the ſterrage, and his eye to the Pole-ſtarre to be directed by that; ſo is the life of a Chriſtian, he muſt alwayes be doing that, that God preſcribes him, and he muſt have his eye to the ſtarre to be guided in his courſe by Gods direction: he that doth not this knowes not what it is to truſt in God.

Dr. Sibbs.

XVII.

As the Beare dares hardly intermeddle with his deſired honey, for feare of the ſtinging of the Bees; ſo ſome men dare not commit ſinne, for feare either of the lawes of men, or in ſlaviſh feare of hell, or the prologue to it, terror of conſcience, yet hugges it in his heart, embraceth it in the armes of his affection, ſuffers it to reigne in his heart, and to take up his thoughts as by a Commiſſion, continually contemplating thereon.

XVIII.

The Drones labour not, but altogether intend their paſſe-time and recreation, and then returne into the hive, and fill themſelves with the pureſt honey, whereby they quickly grow foggie, and either cannot when they goe forth returne into the hive, and ſo periſh abroad, or after a while are ejected or ſlaine by the Bees. And ſuch ſporting Drones the world is full of, who plunge themſelves over head and eares in courſes of pleaſure, wherein they unworthily waſt the fat and marrow of dear and precious time, the flower of their age, the ſtrength of their bodies, emaſculate and melt the vigor of their ſpirits into effeminate ſenſualitie and luſt, drowne the faire and goodly hopes of their education, the improvement of their parts in froth and folly, as though they were placed upon earth, as Leviathan in the

Mr. Bolton, Direct. for walking with God.

the Sea, only to take their ſport and paſſe-time therein. Lovers they are of pleaſure, and having their fooles paradiſe here, muſt therefore in the equity of a juſt and holy proportion, with the rich man looke for their payment and torment hereafter.

XIX.

Bees will not continue well nor long without a Leader, nor will they endure diverſe or more then one. Therefore in the union of ſwarmes, and in caſtlings, where ſometimes many goe forth, yet will the Bees dethrone and deſtroy all but one, and untill it be effected are in a diſcontented tumult and hurly burly, yea often in a civill warre, and if it fall out the parts to be ſomewhat equall, thereby is occaſioned (ſometimes) a totall ruine and deſtruction. For looke how farre any thing goes from unitie, ſo neare it comes to periſhing, and any where the more peace and unitie, the more ſafety and ſecurity. And if in the little compaſſe of a hive, there is ſuch need of a governour and unitie, much more in the great hive of the world. And this governour muſt needs be God, for by men or Angells it cannot be governed. The preſervation of every thing is in the unitie of it; and therefore you ſee any thing that is divided, that diviſion is the diſſolution of it, as when the ſoule is divided from the body, and when the body is divided from it ſelfe; ſo likewiſe in a family or Common wealth, much more in the world. If there were not one fountaine, there would be different ſtreames, and if there were diverſe principles of things, there would be a ſwarving and diviſion in the nature and order of things, and ſo not an unitie, and ſo by conſequence it would be the deſtruction of the whole. Of neceſſitie therefore there muſt be a governour, and this governour muſt be one, and that one is God, who guides every creature under the Sunne, even the ſmalleſt of the creatures, and orders and directs them to their ſeverall ends and buſineſſes, to which he hath appointed them.

XX.

Bees being little and light creatures, are much agitated and diſturbed, with tempeſtuous and ſtormy winds, which becauſe

they cannot altogether prevent, they by a naturall sagacitie and providence doe arme and enable themselves against them. The Bees of *Candie* (as it is reported) poise themselves with smaller pibbles which they carry in their feete, but our Bees to helpe themselves flie very low neare to the surface of the earth, and for the most part under the Lee-side of a hedge, whereby the violence of the wind is much checkt and broken. For as a Ship that is well furnished with tackle and sailes, that may give the motion and advance the swiftnesse of it; yet if it hath not ballast in it, or weight in it to make it goe steddy, or a Lee-shore, where (by the height of the bankes) the violence of the wind is somewhat broken, it is up and downe tossed alwayes, and the more sailes the more danger and hazzard. So Christians in their voyage to the new *Jerusalem*, must not only have the wings of love, but the ballast or feare descending in a low flight to make them goe steddy. We must not have love only but feare, (whereby we flie low) least otherwise we move but wantonly, skipping and danceing by-fits and by spurts in good wayes, and keepe not any constant course in our holy voyage. The eminency and excellency, the security and safety of a Christian conversation ariseth from a mixture of feare and love; for as the purest white and fairest red mixed together, make the beautie of the face in the body: so the mixture of feare and love make the beautie of the affection in the soule, feare mixed with love, for it must not goe alone. Feare though it be apt to make us carefull and cautious, carefull how to please God; and cautious, fearefull to offend him, yet if it be alone will precipitate us into despaire, or into the forlorne hope It must be tempered therefore with love that we looke not only upon the greatnesse, but on the goodnesse and sweetnesse of God, that as we are affected with the prospect of the one, *viz.* his greatnesse, with an affection of holy humble feare, and lowly awe and reverence of him, so that that may not beate us downe and overthrow us by despaire, we must keep up (advanced by the wings of love) looking upon his sweetnesse and his goodnesse. If we thinke on nothing but love, fix our eyes on nothing but goodnesse and sweetnesse in God, we shall be ready to charge our sinnes on his backe in our presumption of his goodnesse, building on his mercy inordinatly, and so presume to doe any thing.

Plutarch. De solertia animal.

Dr. *Stoughton*, Righteous mans plea to true happinesse.

I say,

I say, love alone would be too wanton except it be poised and ballanced with a holy feare and awe and reverence of God.

XXI.

If a swarme be checked and stunted with bad weather presently after it is hived, or if it be small, or very late in the yeare, the Bees will be carelesly desperate, and gather nothing to purpose, for they are out of hope to get enough for their winters provision and maintenance, and as good never a whit as never the better. Good is the Loadstone of all endeavours, a man will not labour for nothing, therefore despaire kilies a mans labours, and plucks up the roote of all his endeavours; if there be any good present, hope makes us labour to increase it; if there be any good to come, hope labours to attaine it: but good there must be at least in hope and expectation, or else all endeavours will flag and wither away to nothing. Mr. *Hooker*, Soules preparation for Christ.

XXII.

The feild wherein Bees feed, is no whit the barer for their biting, when they have tooke their full repast of flowers or grasse, the Oxe may feede, the sheepe fat on their reversions. The reason is because those little Chymists distill only the refined part of the flower, leaving the grosser substance thereof. So ejaculations bind not men to any bodily observance, only busie the spirituall halfe, which maketh consistent with the prosecution of any other employment. Mr. *Fullers* Med.

XXIII.

Many observing the Bees flying into their hive, suppose them best furnished, that they see goe home laden on their thighs, and thinke the other idle that they see carry nothing; whereas though the former be well busied, yet oft times the other are better who are more deeply more richly laden, being full fraighted with honey. Gods servants in this life are more in substance then in shew, when they fast, they anoynt not their faces; and when they give almes let not their right hand know, what their

left hand doth. Good actions are not alwayes rewarded here, and therefore in vaine doe men muster and set them out upon beadroles in this life: labour to get the approbation of God, and so doe good that thy conscience may be well stored in Gods sight, who seing thee in secret may reward thee openly, and make thy light shine cleare as the perfect day. The wise Virgins have their oyle in their vessels, that is, have their holinesse and beautie hidden, and their actions only to be taken notice of by God.

Mr. *Johnston*, Parable of the Virgins.

XXIV.

Bees, if they be not disturbed or provoked, are seldome troublesome or offensive, especially in a remote distance from their hives, but molest or disquiet them at home, then they will furiously invade you, and admit of no termes of peace, but die or prevaile in the ruine of that man or creature that offends them. There are many men in the world, that seeme of excellent natures, quiet spirits, while they are not stirred or moved, but if they be once provoked, the latent embers be uncovered, then they are implacably mischievous.

XXV.

Bees if they fall into the water and be drowned, or be chilled and dead with cold (if it be lesse then the space of a day) if you lay them in the warme Sunne, or bring them neare a fire, they will recover life and revive againe, and doe well. The affections of Gods children are apt to grow dull and languish, if not to be chilled by earthly objects; for our hearts are ponderous, *Multum trahit de terra, de carne multum*, it weighs downward, as the weights of a clocke move downward continually, and if they be once at the ground, the clock is silent, they must pull it up againe every twelve houres, or in such a certaine compasse they must wind them up. And so in this case, there must be courses of winding up holy affections: if the fire be gone, the fire be out, revive it, kindle it againe from heaven, reinforce, chafe and warme your selves by the fire of prayer and other holy duties. When the fire on the Altar was extinguished, it

Dr. *Staughton*, Righteous mans plea to true happinesse.

was

was unlawfull to have it kindled but only by the meanes of heaven. It muſt be the fire of heaven, not any other fire that muſt revive us. We muſt oft be renewing of our holy affections to keepe them vigorous and lively. We muſt frequently excite and ſtirre up our ſelves, when we begin to faynt we muſt rub and chaſe our affections, and eſpecially ſpread our chilled ſpirits before the Sunne of righteouſneſſe, that he may with the heate and healing of his wings revive and quicken us. Mal. 4. 2.

XXVI.

The little worme or potentiall Bee, after a ſhort life of a few weekes, ſtirres no more, feeds no more, but lies dead and entombed, in the cell wherein it was bred: but waite with patience a ſcore of dayes, and you ſhall ſee it revive, and appeare a farre more noble creature then it was before. What is this, but an embleme of the reſurrection? *Aarons* rod which was a drie and withered ſtick, in a night buds and bloſſomes, and brings forth ripe Almonds. For to every thing there is a ſeaſon, and a time to every purpoſe under heaven. A time to die, and a time to riſe againe. Eccleſ. 3. 1.

XXVII.

Bees can with eaſe and facility dart in their ſtings, but they have no power to extract or draw them out againe; hurt they can, helpe or eaſe they cannot. We are all naturally wiſe to doe evill, but to doe good we have no underſtanding. We are all as ſpring-locks, ſhut we can of our ſelves, but not open, for our naturall powers (as the Schooles ſpeake) are become *naturales impotentiæ*. And howſoever the ſword of the Lord, and the ſword of *Gideon* may goe together, yet the hand of *Gideon*, or the ſword in his hand, or the edge on his ſword, is not able to pierce, unleſſe God give power, *non enim tam agimus quam a deo agimur*, ſaith *Zanchie*; for man is not ſo properly ſaid to doe good, as to be compelled to doe it by the good Spirit of God. *Apin.* *Zanch.*

XXVIII.

XXVIII.

Robbing Bees will desperately adventure to spoyle and plunder their neighbours. But if they find centinels before the ports to question them, and a strong guard at the gates to oppose them, and when they have with danger and difficultie passed through these, numerous forses within stoutly charging the first assailants with their ruine and destruction. The survivors will be weary and wary, doubtfull and fearfull further to prosecute their treacherous designes. For even naturally all brute creatures avoyd that place where they are sensible by a token that their fellowes have miscarried. But how great the neglect of Gods judgements among men is appeares: perhaps at first they are deeply affected with them, but yet as a pang it is quickly overpast; and as newes it soone growes out of date. *Pharaoh* was no sooner quitted from one plague, but presently his heart was hardened to draw on another. The *Israelites* that were so affected, flighted and frighted at the horrible end of *Corah* and his complices, even the morrow after fall on *Moses* and *Aaron*, and upbraid them for the losse of the people of God. Many looke on others judgements, as furnished with a supersedeas from all arrests, and argue from their punishment how they have deserved, without the least reflex upon their owne mutable condition.

Dr. *Prideaux*, *Higgaion* and *Selah*.

XXIX.

As Bees are industrious to gather, so what they diligently get, they doe not carelesly and at randome disperse about the hive, but discreetly and orderly, beginning at the top and so downwards, dispose it in their waxen cabinets, and as soone as they be full of honey close them fast with a waxen lock, both to prevent robbers, and also to necessitate themselves to further labour as long as the season of gathering continues. Many heare, but the word heard profits them not, because they are careless to treasure up the truths delivered, they quickly forget; such are like unto a man who beholds his naturall face in a glasse, and goeth his way, and forgetteth what manner of man he

James 1, 23.

he was. But would we thrive under the meanes, we muſt when we have heard and marked and underſtood the truth of duties delivered, lay them up, locke them cloſely and ſafely in our hearts, as in a ſafe repoſitary, we muſt commit good inſtructions to memory: had we rich treaſures we would not lay them up negligently, but keepe them under locks and keyes, barres and bolts, why then ſhould we let holy inſtructions ſlip out of our memories, whereby all former labours, as of the ſpeaker, ſo of the hearer is utterly fruſtrate.

XXX.

If the Bee lights upon a flower where there is no honey (being waſted or gathered before) ſhe quickly gets off and flies away to another, that will furniſh her. Let us not looſe our ſelves, and forget our errand; our father *Adam* loſt our happineſſe, and we are ſent to ſeeke it; ſeeke it where it is, and goe handſomely to worke; ſay, I am not made for riches, they are made for me; I am not made for creatures, they are made for me, and I am their Maſter: Therefore theſe cannot make me happie. I am made for eternitie, for everlaſting life and happineſſe. Therefore let me ſtudy that, mind that, ſee that end beyond inferiour ends; Why doe men ſeeke wealth, but to be happie? why pleaſures, why honours, but becauſe they would be happie? If theſe cannot bleſſe and enhappie me, why ſhould I burne day-light? why ſhould I not off them, as the Bee gets off the plants that yeild her no honey, and once at laſt ſee where my buſineſſe lies, in purſuing happineſſe, and where my happineſſe lies, in Gods wayes; the firſt ſtep whereof is povertie of ſpirit.

Mr. *Harris*, Way to true happineſſe.

XXXI.

When the wax is mollified and wrought warme, then ſet the ſeale on it, for it will receive the impreſſion. And when God hath any wayes mollified our hearts, and made them in a mourning caſe, cloſe with him; when we finde our ſelves any whit ſoftened, take the hint, improve that opportunitie.

XXXII.

XXXII.

Bees are naturally harmleſſe and patient creatures, each in and for her owne particular will ordinarily receive any prejudice, hurt, or moleſtation, and when they ſuffer are wondrous calme, but neare the hive, where the cauſe ſeemes to be publique and their common wealth to be endangered, then they are marvelous hot and furious, and notwithſtanding the feirceſt oppoſition, will reſolutely charge all that ſtand in their way, in the defence of the publique, although they die in the conflict. But how farre ſhort are many Chriſtians in their practiſes? in any publique cauſe where the glory of God is concerned, or the common good intereſted, you ſhall have them beare all quietly: Oh, ſaith he, you muſt have patience, and beare with ſmall matters: but in a cauſe that toucheth his owne particular (ſay himſelfe be concerned in his penny, in his peace, in his reputation, or the like) then none are ſo fiery, none ſo furious, he is all upon a flame, then no penaltie is thought too great, no diſgrace too heavie for ſuch a perſon that hath done him diſpleaſure. Whereas a meeke Chriſtian in his owne cauſe will be meeke and ſilent, but in Gods cauſe zealous and earneſt. See it in *Moſes* when he was cenſured, diſparaged reviled, he beares it quietly, pockets it up without diſtemper: but at another time when the cauſe was publique, when it concerned the glory of God, and the good of the Church, then none ſo zealous, none ſo fiery as *Moſes*, he cannot brooke nor beare.

XXXIII.

Bees in *July* extract honey out of many and various flowers, but yet by little and little and in a ſmall proportion; but if a honey-dew then falls, in a ſhort ſpace are they largely repleniſhed, and have a triplication of their ſweetes, and a full refection with their Nectar. Holy prayers, meditations and intercourſes with God, private readings, ſoule ſoliloquies and ſpirituall diſcourſes are intertainers and ſatiſfiers of the Saints neceſſities, but in publique ſolemnities, God opens his treaſures, powers out his graces more abundantly; private devotions and ſecret

Dr. *J. Taylor*, The great Exemplar.

ſecret offices of religion are like refreſhings of a garden with the diſtilling and pettie drops of a watering pot: but addreſſes to the Temple, and ſerving God in the publique communion of Saints, is like raine from heaven, where the offices are deſcribed by a publique ſpirit, hightened by the greater portion of aſſiſtance, and receives advantages by the adunations and ſymbols of charity, and increment by their diſtinct title to promiſes appropriate even to their aſſembling, and mutuall ſupport, by the piety of example, by the communication of counſels, by the awfulneſſe of publique obſervation, and the engagements of holy cuſtomes.

XXXIV.

Drones to the eye are goodly creatures, fairer and larger then the working Bees, they make a great noiſe and lowd buzzing, flie often forth in the heate of the day, as if they were buſie to advance the publique good: but they are all emptie and vain glorious ſhewes, for they contribute nothing to the publique ſtore, but when after a few wanton vagaries, they have emptied themſelves and whetted their ſtomacks, they returne into the hive and liberally feede of the Bees labours. So one writes of young *Marius*, that by reaſon of the ſtoutneſſe of his talke and geſture, he obtained to be called the ſonne of *Mars*, but when he came to proofe, he gained a new name, and was called the ſonne of *Venus*. Thus many in their words appeare gracious, but by their actions are baſely effeminate and fickle, wanton and idle.

XXXV.

Some hives will lie out two or three yeares together and not ſwarme or if they doe, very late, and then ten to one but they miſcarrie and die, both the old ſtock and the ſwarme too. Now the beſt way to preſerve ſuch a ſtock, is timely to drive it into an emptie hive, and the Bees being many, will provide themſelves ſufficiently againſt winter, and ſwarme ſeaſonably another yeare, ſo that in ſome caſes driveing is not an undoing and deſtruction, but a preſervation of the ſtock. Thus the gardiner

Mr. *Hooker*, Saules preparation for Chriſt.

diner cuts off a graft or ſiens to plant it into a new ſtock, not to burne it. So the Lord ſometimes cuts off a ſinner from his abhominations, but he will not caſt him into hell, and the Lord melts the heart of a poore ſinner, but conſumes him not; but as the Goldſmith melts his gold, not to conſume it all away, but to make it a better veſſell; ſo the Lord melts a poore ſinner, to make him a veſſell of glory. The Lord will fire this proud heart of yours, and clip off thoſe knotty luſts, but if you belong to him, he will leave a little remainder of hope, that you ſhall be formed and faſhioned anew, not conſumed.

XXXVI.

The Queene Bee is a very amiable creature, and of a brighter colour, and more tranſparent hue then other Bees, ſhe is ſomewhat yellow under the belly, and on her legges, enclining to a golden colour, and this colour intimates her princely nature, her royall blood, and ſoveraigne dignitie. Some Heralds tell us, that none ought to beare gold-yellow colour in armes but Emperours and Kings, and ſuch as be of the blood royall.

Mr. *R. Abbot*, *Davids* deſires.

Oh that none would beare the glittering ſhew of profeſſion and holineſſe, but thoſe that are of the race of Jeſus Chriſt the King of Kings, then ſhould we not be as the Prieſts, Prince, and people of *Iſrael*, a ſnare in *Miſpah* to the ſimple, and a net ſpread on mount *Tabor* to catch them that know us not, with an opinion of good men and good women, faithfull Chriſtians and true beleevers, when we are nothing leſſe.

XXXVII.

The Bees worke is admirable, orderly, and geometrically proportionable, all full of wonder; whereas the Waſpes and Hornets combes for ſubſtance are unprofitable droſſe, although they be hexangle cels, and ſomewhat orderly framed downwards, yet upwards have no beautie, are nothing ſo polite and accurate. But the Humble Bees combes are but rude lumpes, a little hollowed for their owne end and uſe. To theſe three ſorts may we compare the obedience of moſt men profeſſing Religion; there is the obedience of the common Proteſtant, per-

perhaps ſomewhat more then a Pagane performes, yet a rude and indigeſted devotion, heaped up together by law and cuſtome. Then there is the obedience of the hypocrite, in many things reſembling true devotion, ſuper-fine carriages, but yet on one ſide only, to man-ward ſomewhat exact and formall, but to God-ward rudely, careleſſe, and negligent. Whatſoever is done is not done with reſpect to God, and conſcience of his commandements. Laſtly, there is the obedience of the true beleever, ariſing from a grounded know edge of the will of God and faith, and from a holy feare and love of God, conſcientiouſly and reſpectively to approve himſelfe to God in the diſcharge of his duties, and it is exactly modelized and ſquared according to the rule of Gods word.

XXXVIII.

It is an obſervation that a man cannot draw (even in naturall things) a long ſtraight line perfectly exact, except he draw it by ſome rule; It is not the ſteddieſt hand that can doe it exactly, but there will be ſome crookes. And therefore men uſe to take a rule to draw a line by. Certainly it muſt be ſo in ſpirituall obedience, a man muſt have an eye to the word of God, and make that his card and compaſſe to ſaile by, make that the rule and warrant of his actions or elſe though he hit (as it were) hab nab at ſome circumſtances, it is not formall obedience. Now though a man may (hand over head, as they ſay) make ſome haſty and tumultuous doings, patch up a great deale of mud together, to make a wall, not caring for a ſquare to make it perpendicular (as the Humble Bees rudely compoſe their combes, hand over head without any great care or art) yet if a man would build a Temple or ſtately Pallace, he muſt doe it perpendicular, it muſt be evenly and orderly built according to an exact line both within and without alſo (and thus geometrically and regularly build the Bees as it were by ſquare and plummet) or elſe one part will over-top another, and all tumble downe. It is ſo in this cauſe, whatſoever is not ſquared by the rule of Gods word, what ever materiality it may have, it hath little or no formality of obedience. *Dr. Steughton.*

XXXIX.

Dr *Hall*, Occaſionall Meditat.

How may ſmall things annoy the greateſt? even a mouſe troubles an Elephant, a Gnat a Lion, a very flea may diſquiet a Giant. What weapon can be nearer to nothing then the ſting of a Bee? yet what a painefull wound hath it given? that ſcarce viſible point how it invenomes and rankles, and ſwels up the fleſh? the tenderneſſe of the part, addes much to the griefe. And if I be thus vexed with the touch of an angry flie, Lord, how ſhall I be able to endure the ſting of a tormenting conſcience? as that part is both moſt active and moſt ſenſible, ſo that wound which it receives from it ſelfe, is moſt intolerably grievous There were more eaſe in a neſt of Hornets, then under this one torture: O God, howſoever I ſpeed abroad, give me peace at home, and what ever my fleſh ſuffers, keepe my ſoule free. Thus pained, wherein doe I find eaſe, but in laying honey to the part affected? that medicine only abates the anguiſh. How neare hath nature placed the remedie to the offence? whenſoever my heart is ſtung with the remorſe of ſin, only thy ſweete and precious merits, O bleſſed Saviour, can mitigate, and heale the wound; they have vertue to cure me, give me grace to apply them; that ſoveraigne receite ſhall make my paine happie; I ſhall thus applaud my griefe, it is good for me that I was thus afflicted.

XL.

Bees (as many other creatures) have wit enough to find out remedies for the cure of their maladies: to preſerve them ſtrong and vigorous, and to recover themſelves being weake; they (if they be neare the Sea) delightfully gather of flowers that grow on the ſalt marſhes, as Thrift, Hogs ſcurvy-graſſe, &c. and where they are remote from it, they water in ſinkes and ſaw pits, and extract a nitrous ſaltneſſe with their water. But man only being wounded by ſin, hath not by the light of nature any wit to ſeeke for remedie, yea only man is careleſſe of his eternall ſalvation. Every one is wiſe enough to doe evill, but to doe well they have no underſtanding: and no marvaile, for

Jer. 4. 22.

for as the cleareſt eye beholdeth not the brighteſt object, except the Sun-beames doe come betweene to enlighten it, ſo the ſharpeſt wits are not able to conceive the heavenly myſteries of our redemption, regeneration and eternall ſalvation, without the bright beames of Gods Spirit ſhining into them to enlighten them. Dr. *Jeniſon*, Earths vanitie.

XLI.

Thoſe hives are in beſt caſe where the Bees make moſt noiſe; but thoſe Common-wealths are in beſt ſtate where leaſt noiſe and tumult is.

XLII.

As a man may eate too much honey, ſo pleaſure it ſelfe growes loathſome and diſtaſtfull by immoderate uſe, *Nempe voluptatem commendat rarior uſus*; moderation is the mother of duration. It is like the ſteddy burning of a taper, or the fire upon the Altar, which never went out, whereas headſtrong violence, like a ſquib or flaſh of lightning dazels the eyes for a moment, but is inſtantly extinct. Dr. *Hukewill*, King *Davids* Vow.

XLIII.

It is not good to provoke Waſpes and Hornets, but it is much worſe to provoke Devils. Some rude people will dare the Devill, and challenge and bid the wicked fiend to come if he dare, and to doe his worſt, &c. Silly wretches, the Devill laughs at them, to ſee how foole-hardy they are againſt him, that hath them in his clutches already. Mr. *Randall*, St. *Pauls* triumph.

XLIV.

Bees out of their unwearied and reſtleſſe nature are inceſſantly active for their future preſervation, and therefore when they cannot worke (Harveſt being warme but drie, and not affording many flowers) they will ſteale and plunder. And for that purpoſe ſend forth ſundry Emiſſaries, which ſearch and examine

examine every hive in their walke. At firſt theſe eſpialls make faint eſſayes, but finding little oppoſition or contradiction, they then (yet doubtfull) enter, and finding the acceſſe eaſie, fetch preſently a new ſupplie, and ſtill recruite their forces, ſo that after a little while, it will be difficult, if not impoſſible to withſtand them: whereas a guard before the doore, a ſtout reſiſtance or peremptory repulſe at the firſt, would have not only weakened, but fruſtrated all their deſignes. Wouldſt thou get the maſtery over thy ſin (whatſoever it be) give it altogether peremptory denialls, ſuffer it not to delight thee in the leaſt tickling conceite and pleaſing ſpeculation. It will be eaſie to abſtaine from it when the deniall is reſolute and peremptory; barre up the doores, give luſt no audience, get as much ſtrength to reſiſt, as the luſt hath power to attempt. If we cannot put out a ſparke, how ſhall we put out a flame? if we get not the Maſtry over the firſt motion to ſinne, much leſſe ſhall we be able to overcome when it is brought to maturity in action. Sin is like the water, give it the leaſt way, and we cannot ſtay it, run it will in deſpight of us. And a ſtreame riſeth by little and little, one ſhowre increaſing it, and another making it ſomewhat bigger, ſo ſin riſeth by degrees.

Dr. *Preſton*, Doctrine of Mortificat.

XLV.

Bees when they are pleaſed and contented make an uniforme and delightfull harmonie, but being illegally acting as in robbery, or diſcontented in the loſſe or abſence of their Leader, they are diſtracted, as it were, in their flights (nay frights) and uncertaine motions, and diſpleaſing and harſh in their buzzing clamors; for as when the ſtring of an inſtrument is out of tune, then the Muſick doth jarre: ſo when diſcontents predominate, all is in a confuſed medley, atapie, and diſorder. Diſcontents produce not greater miſchiefe in the hive of the Bees, or of the Common-wealth, then evill concupiſcence doth in the ſoule of a man, it marres all his good actions: to mingle water with wine, it makes the wine the worſe; to mingle droſſe with ſilver, it makes the ſilver the more impure: ſo evill concupiſcence being in the ſoule of a man, doth ſtaine, diſorder, and blemiſh his good actions, in that he performes them either with vaine-glory, or falſe reſpect.

XLVI.

XLVI.

Princes promiſe any thing to diſcover a treaſon, but they never truſt the Traitors, and if happily they favour them for a time, the hatred which followes after is more violent and irrecoverable: for they uſe them as Country-men doe their Bees, when they have drawn out the honey and wax, they chaſe them away with fire and ſmoake. *Pet. Mathew*, Continuat. of the generall hiſt. of *France*, in the life of *Hen.* the 4th.

XLVII.

Many hate not ſin, neither flie it becauſe it is ſinne, but as children doe Bees, not becauſe they are Bees, but becauſe they have a ſting; ſo doe they ſinne, becauſe it is hurtfull. M *Stock*, expoſ. on *Mal.* c. 2. v. 16.

XLVIII.

When Bees are moſt angry in their ſwarming or fighting, caſt but a little earth upon them, and they are preſently quiet, and give over their humming noiſe and contention. So though nothing elſe can aſſwage the tumor of the proud, or quench the burning deſire of honour in the ambitious, of wealth in the covetous, of pleaſure in the voluptuous; yet the conſideration of the grave can. He that ſeriouſly thinketh with himſelfe, theſe goodly roabes of mine, cloath nothing but dung, all my dainty fare feedes but wormes. I who (perhaps) have power over other mens lives, have no power of my owne life, no not for a moment. Even whilſt I ſit upon priſoners and condemne guilty perſons, I am arraigned in my conſcience, and plead guilty before God: he that keeps downe his heart with theſe thoughts, can no more be overthrowne with pride, then a ſhip which is well ballaſted be blowne away with a ſtorme. Dr. *Featly*, Judges Charge.

XLIX.

There are no ſtraines in Muſick ſo delightfull, as thoſe in which diſcords are artificially bound in with concords; nor diſhes ſo dainty as thoſe in which ſweet things are ſeaſonably mingled

mingled with ſowre; nor pictures ſo beautifull as thoſe, in which bright colours with darke ſhadowes are curiouſly tempered. Nor would the ſweetneſſe of honey be ſo much commended, if there were not difficulty and danger in the compaſſing of it. Did we not feare the ſting in the Bees taile, we would not ſo much value the honey in her mouth? but what with perill, if not paine, is procured, is better prized, more praiſed.

L.

Bees as they are alwayes laboriouſly painfull, ſo eſpecially when they have been long ſhut up and confined by unſeaſonable weather; then upon the firſt approach of a calme Sun-ſhinie day, doe they rouſe themſelves up from their (now loathed) reſt; or on the fall of a honey dew in a warme and mild ſeaſon doe they eagerly purſue their delightfull labours. Shall irrationall creatures take the hints of opportunitie, and ſhall we trifle them away: Let us be jealous and cautious of theſe creepings and turnings, theſe ſerpentine tricks of the fleſh, and the world, that would ſlay us: Lay hold when thou haſt an opportunitie to heare, to read, to pray, *Poſt eſt occaſio calva*, make uſe, take the occaſion, when God hath led thee to privacy, thou art there where thou maiſt freely have communion with thy God, ſlight it not negligently, let it not ſlip, it is Gods call, doth the Spirit of God whiſper us, ſaying, this is a dutie thou muſt doe, and thy conſcience doth witneſſe with thy ſpirit, that it is ſo, and thy owne affections (if thou haſt any heaven-ward duty-ward) doe ſtirre thee alſo, let not this wind blow in vaine over thee, extinguiſh not the Spirit by neglect, when God offereth thee a hint by his Spirit take it, take that hint, I ſay, a man may doe more in an houre of prayer, when he hath the motions and the power of the Spirit, when the fore-runner of it is ſome ſweet motion caſt into the heart of a man, ſome ſweete touch of meditation puts him upon duty, oh then if a man would make uſe of the ſailes of that hint, by that wind he might diſpatch a great voyage of prayer, and returne richly laden.

Dr. *Stoughton*, Righteous mans plea to true happineſſe.

LI.

The firſt life of a Bee is ſcarce worthy to be called a life, *vita*

vita eſt ; non vitalis. She is included in a little narrow cell, without any locomotive power ; ſhe hath neither eye to ſee, nor organ to heare ; Is not ſenſible of danger, much leſſe able to prevent it ; Is only capable of that meate, which is put into the mouth, whereby it growes but unprofitably, like a plant rather then a brute: for it can neither helpe nor hurt, but after it is tranſmuted by death it appeares in a more excellent and glorious condition : It is agill and induſtrious, beneficiall to it ſelfe, to others. In a word, the firſt life is but a ſparke raked up in aſhes, the other is a ſparke blowne up into a flame ; the firſt is the ſap in the roote, the latter like the ſap that fills the branches with leaves and mature fruite Wherefore is it that the Saints deſire death, not that they might be deprived of the comforts of life ; they would not put off their cloathes, but to be better apparelled. They deſire death to attaine a life, that might ſwallow up the weakneſſes, ſickneſſes, troubles of this : not as a gulfe ſwallowes up that which is caſt into it, or as the fire ſwallowes up the wood by conſuming it ; but as perfection ſwallowes up imperfection, or as manhood ſwallowes up childhood, not extinguiſhing it, but drowning it that it is not ſeene.

LII.

By nature the Bees expell the Drones, becauſe they affect only eaſe and content themſelves to doe nothing, caring only to avoyd labour which attends upon active and induſtrious imployment. And why was *Meroz* curſed? becauſe they came not out to the helpe of the Lord againſt the mighty ; and idle and ſloathfull ſpending of a mans life is every where in Scripture condemned. Willfull defects & omiſſions of doing good bring damnation, he that wanted his wedding garment was thruſt out of doores and caſt into utter darkneſſe.

Mr. *Sym:* Lifes preſervative.

Judg. 5. 23.

Mat. 22. 13.

LIII.

Soft wax admits any ſtampe, and ſimple perſons are eaſily corrupted by themſelves, or deceived by others.

LIV.

Mr. *T. Jacombe, Enoks walke.*

The world is troubleſome, it's gall is more then it's honey, it is not only vanitie but vexation; have all, it is but a vanitie, want but a little 'tis vexation. *Ahab* is ſick, becauſe he hath not poore *Naboths* vineyard; *Haman* wants but a knee from *Mordecai*, and this imbitters all.

LV.

Mr. *Bolton*, Directions for walking with God.

All the wayes of worldly pleaſure, are ſtrawed with needles and nettles, which ever and anon prick and ſting her darlings, as they pluck her fading flowers: ſo that at beſt, they are but like Beares robbing a Bee-hive, who ravenouſly rifle the combes, and with much adoe ſuck out a little honey, but in the meane time are ſoundly ſtung, and ſwollen about their heads for their painfull pleaſure.

LVI.

Honey over liberally eaten cauſeth vomiting, the ſtomack cannot hold it: ſuch are ill gotten goods to the heart, as the *Canaanites* were to the good land, the land groaned till it had ſpewed them out, the conſcience travells till it be delivered of theſe. They are to the ſoule as *Jonah* to the Whale, the Whale had devoured him, but could not reſt, till he was reſtored; ſo it is with the conſcience, if men play the whales, and make fiſh of all that comes to net, the conſcience will be as weary of ſuch a burden, as the whale of the Prophets bones.

LVII.

Mr. *Harvie*, *Abſolons* ſume tall.

Many lay the whole ſtrength of their affections, upon the things they fancie (or as the Creeple layes his full weight upon his crutches) and therefore when they are taken from them (as *Pharaohs* chariot wheeles) they are drawne upon all foure, and ſtick in the mud: yea they ſet on their affections as the Bee her ſting with all their might and ſtrength, they convey into

into others their very bowels and hearts, and therefore when they are gone they are heartleſſe.

LVIII.

He that is pained with the Bees ſtinging, muſt for cure ſpeedily pluck out the ſting, and then apply juice of mallowes mixed with oyle, or honey to the wound. And the beſt remedy for a wounded conſcience, is firſt to pluck forth the ſting of ſin, and then to waſh in Chriſts blood, and for the future keepe the heart above all keepings; for as the eye is ſubject to infinite diſtempers, ſo is the conſcience. *Geminianus de exemplis. lib. 3.*

LIX.

Bees ſolitary and alone (eſpecially in the night or winter ſeaſon) are quickly benummed with cold, and die; but many united together, are agill and lively; nay one chilled with cold, put to the many, recovers, and hath a new returne of life. So that I doe not improperly ſpeake, if I ſay, they live as much by heate as by meate. And therefore if there be many in a hive, though there be but a tollerable ſupply of food, they will doe well, but if they have never ſo much meate, and be not many and numerous, they will miſcarry and come to nothing. The communion of Saints puts life into thoſe that have it not, and increaſeth it in thoſe in whom it is. The health of the body doth not communicate it ſelfe to others; it is otherwiſe in the life of the ſoule, the life of it makes others to live more, as iron ſharpens iron, ſo one holy man doth another: when two lie together they keepe one another warme, there is action and reaction, this is a powerfull meanes to get and increaſe this life.

LX.

Bees in the Spring when the weather is faire will worke chearefully; but if the Sunne withdraw his beames, the wind blow hollow, the chilling ſhowers deſcend, then they are preſently dull and liveleſſe, ſcarce appeare, if at all not farre from

the hive; it is an uncomfortable time, the ſpirits of the Bees lower, are heavy and ſad: we ſee it alſo in the body, that the animall ſpirits in the braine, which are the cauſes of motion and ſenſe, if they be obſtructed, there followes an Apoplexie and death. So it is, between Chriſt and the ſoule, he is the Sunne of righteouſneſſe, by whoſe beames we are all comforted and cheared, but when they are withheld, then our ſpirits decay and are diſcouraged. Summer and Winter ariſe from the preſence and abſence of the Sunne, the preſence of the Sunne when it comes neare cauſeth the earth to be cloathed with a rich embroiderie of fruits and flowers. And what makes the Summer and Winter in the ſoule, but the abſence or preſence of Chriſt? what makes ſome ſo vigorous beyond others, but the preſence of the Spirit? As it is in nature ſo it is here, the preſence of Chriſt is the cauſe of all ſpirituall life and vigour, but if he withdrawes his preſence a little, the ſoule failes.

Dr. *Sibbs*, Bowells opened.

LXI.

Bees when they aſſault a man ſtrike fiercely at the face, the beauty of man; and principally in the face aime at the eye, the beautie of the face. Thus Satan though he be malicious againſt all mankind, yet chiefly againſt thoſe who by Chriſt are conquered out of his hand, and having their garments waſhed in the blood of the Lambe are moſt beautifull. For as the Panther rageing on the picture of a man, bewrayes the hatred he beares unto him. So the Devill to teſtifie how much he hates God himſelfe, ſpends the greateſt of his fury on them that beare the image of God. Thus doe Satans inſtruments incarnate Devils, though they care not uſually whom they wrong, oppreſſe, injure, hate, yet moſt of all the holy ones in earth are the object of their hatred, they are the drunkards ſongs, and a ſport to the fooliſh. What muttering, what whiſpering, what cenſuring, what ſiniſter conſtruction is ſet upon every action of theirs? what diſcovering, what blazeing of infirmities? what ſo high, but they will reach it; what ſo deepe, but they will be ſounding the bottome of it? but a day will come when they will cry out with *Cicero*, *O me nunquam ſapientem, et aliquando id quod non eram falſo exiſtimatum.* Aye me, that indeed

was,

was never wise, but falsely thought to be what I was not. And with those in the booke of *Wisdome*; *We fooles thought his life madnesse, and his end without honour: how is he accounted among the children of God, and his portion among the Saints?* But the innocent heart shall then lift up a chearfull countenance, as knowing that though here it were despised, yet there it shall be justified and rewarded with a crowne of glorie. Wisd 5. v. 4, 5.

LXII.

Waspes gather not as Bees yet some seeing them running on the tops of flowers, and sucking in the cels are notably deluded, supposing that they gather as well as the Bees: Whereas they only suck to satisfie a wanton fancie, but carry away nothing for a future supply of themselves or Common-wealth. Hypocrites in many out-side duties may comply with beleevers, and have their conversation in such actions, that they are usually practicall in, and so deceive many, who are easily beguiled with similitudes. All deceite is from similitude. False wares having the same die that the true have, deceive the buyers; so falling starres are like other starres. When we see men that professe religion false-hearted, many are apt to thinke that all are so; wherefore the Apostle prayes that they might abound in all knowledge and judgement to discerne of things that differ: this proximitie makes many deceived. Phil. 1. 10.

LXIII.

A lamp or candle by the brightnesse of it inticeth the Bee (as many other flies) to embrace it, but by that meanes she is eyther drowned in the oyle, or burned in the flame. So the shewes of sinne and the pleasures of the world, entice the mindes of men that their hearts are drowned in many feares and sorrowes, and when they suppose that they have catcht all, they themselves are caught. Finally, corruption and destruction (the naturall ends of all things under heaven) layeth hold upon them, *Qui lachrimarum causas tripudiantes peragunt, ut videntes mortis negotium exequuntur.* Who goe dancing through the causes of their mourning, and with laughter act the tragedie of their owne death. *Greg: Moral. lib. 20. c. 6.*

LXIV.

LXIV.

The Titmouse is a great destroyer of Bees, and more easily and certainly to obtaine his pray, will in the winter watch at the doores of their hives (their Castles of security) and as soone as any come forth seizeth upon them, and eateth them; If none appeare he knocks with his bill, and they feeling the motion come forth to know the cause, and are presently devoured by him. In the Spring time he resorts to the willow trees, (whither the Bees come to gather) and there invades them, so that they are no where secure. And thus, and more active is the great Apollion the Devill to destroy mens bodies and soules, sometimes fitting temptations to mens tempers and constitutions (for he cannot by force without our owne consent prevaile over us) As a bait of promotion for *Absolon*, because he is ambitious; of pleasure for *Sampson*, for he is voluptuous; every man will not be drawne to sin by every object; an earth-worme esteemeth not pleasure, and a man by temper voluptuous, esteemeth not profit much, nor an ambitious man either; and therefore the Devill who is wise (as *Isidore* saith) hath his μεθοδους, *Ephes.* 6. 11. and his βαθη, *Rev.* 2. 24. his artificiall wayes and deepe reaches, and presenteth men with suitable objects, for the love of which he thinkes they will be content to straine their consciences, and breake Gods lawes; and presenteth them at fit times and places, for every time is not a season, all places are not opportunities, there is the houre and power of darknesse. And there is the time of pleasure and prosperitie, when men are apt to be regardlesse of themselves, and the high Priests hall to worke upon *Peter*, the times of our weaknesse when we are wholly deprived of such a friend or governour, as might by their watchfull observation of our courses restraine us from sinne, or by their counsell uphold us, by their rebukes and corrections recover us if we fall.

Isidor. lib. 1. de summo bono.

Mr. *Hoard*, Soules misery.

Luk. 22. 53.

LXV.

If the Queene Bee miscarrie in the hive, or flying out of it for recreation or evacuation (for otherwise ordinarily she stirreth

reth not forth) come to some mischance. All her subjects are presently in a sad mourning posture; now there is nothing but confused discursions, a wofull complaining, a cessation from worke, and quickly a miscarriage and death of all. And if Christians sad and grieve the holy Spirit of God, and cause him by their sinnes to goe away from them, they cannot (if they be sensible of their condition) but be in a sad and mournfull estate; for as the ayre is darke and chill, the earth cold and wet, and the face of the sublunary world uncomfortable, when the Sunne, which is the light and life of it, hath withdrawne his light; so must the face and state of the soule needs be very gloomy, when the Spirit, who is the comforter, hath withdrawne his presence.

LXVI.

When a man crops a flower from the earth, he can get nothing out of it, but the sweetnesse of the smell, or the delightfulnesse of the colour: but when the diligent Bee comes, she will make more of it, she will extract that which is (as it were) the very spittle of the starres. So when simple carnall minded men, read the Poets and the Philosophers, they gather nothing but delight and pleasure; but when the diligent Bee comes, a wise man, a serious considerate man, he drawes honey out of them. Dr. *Day*, Doomesday.

LXVII.

There is left in the Church, a power and authority, which must be used when there is occasion, to draw the sword against contumacious rebells, which will not be reclaimed by other meanes. As S^t^. *Ambrose* saith, The Preacher of the word must be like unto the Bee, he must have both a sting and honey.

LXVIII.

Bees when they have filled themselves with water, they cannot gather honey, untill they have vomited it up. And he that will thrive by the food of the word, must empty and unburden the

the ſtomack of his ſoule of all things that will hinder the purity and power of it from taking poſſeſſion of his heart: he muſt bring a heart and a head like two emptie buckets to draw with geedineſſe and joy the waters of life out of the wells of ſalvation: even the honey-combe, the ſweeteſt thing in the world is loathſome to a full ſtomack.

LXIX.

Many creatures (in particular Bees) by antipathie and inſtinct of nature ſhunne that which is contrary or obnoxious to their ſafetie; and men by their intellectuall parts doe foreſee and diſcerne what is hurtfull and dangerous to them or their lives, and decline and oppoſe things that have a tendency thereunto.

LXX.

Mr. *Renolds*, explicat. of the 110 Pſal.

As *Sampſon* met the Lion as an enemie when he was alive, but after he was ſlaine, he went unto him as unto a table; there was only terror while he lived, but honey when he was dead. So doubtleſs many men to whom the bodily preſence of Chriſt, and the mighty power and penetration of his heavenly preaching, whereby he ſmote ſinners unto the ground, and ſpake with ſuch authoritie as never man ſpake, would have been unſufferably irkeſome and full of terror (as it was unto the Scribes and Phariſees) can yet now that he is out of their ſight, and doth not in perſon, but only by thoſe who are his witneſſes torment the inhabitants of the earth, pretend much admiration and thankfull remembrance of that death of his which was ſo full of honey for all that come unto him.

LXXI.

Bees are diligent and painfull in their worke, but frugall and temperate in their feeding. Their food conſiſts of two kindes, or rather one diverſified, wet and drie, honey and Bee-bread, ſo that you may draw a bill of their fare, and a catalogue of their proviſion in ſetting downe bread and water: and having

theſe

these they have enough, for they want nothing. But many men lay out on a meale a yeares allowance, and waſt as much provision in a few houres as were ſufficient to releive the famine of an armie. Quickly doe many men devoure all that all other members (the Caters and Purveyors) can bring in, yea whatſoever art can deviſe, luxurie, and all the obſequious ſervant of the idoll Belly invent; So that *Judas* his purchaſe, *Aceldema*, is no way comparable, that indeed a greedy grave, employed to funerall uſes, able in eight and fortie houres, as it is reported, to conſume the fleſh of any carkaſſe therein buried: but this in foure and twentie houres conſumes many carkaſſes of fiſhes and fowles, and generally twice a day all the fleſh therein interred.

Sandys, page 187 and other travellers.

LXXII.

What is a Bee to a Beare, or a Mouſe to an Elephant? and yet if a Bee faſten his ſting in the noſe of a Beare, or a mouſe creepe up and gnaw the trunke of an Elephant, how eaſily doe ſo little creatures, upon ſuch an advantage, torment the greateſt? certainly the proudeſt of men have ſome tender part into which a ſting may enter, the conſcience is as ſenſible of Gods diſpleaſure, as obnoxious to his wrath, as ſubject to his word in a Prince as in a beggar. If the word like *Davids* ſtone find that open, and get into it, it is able to ſmite the greateſt *Goliah*.

LXXIII.

The Drones are a lazie and careleſſe generation, delighting themſelves in ſportfull recreations, and delicious dainties: never providing nor forecaſting for themſelves how it ſhall be with them afterwards, but thinke to fare tomorrow as they have done to day, and ſo ſucceeding dayes, as they have dayes; but the provident prudent Bee, finding a likely decay of the gathering ſeaſon, and obſerving that the Drones are only ſpenders and riotous waſters, doe at laſt violently expell them their hives; which they are unwilling to leave, having provided nothing for themſelves, and therefore readily returne againe; but becauſe they will take no warning, they then ſlay them

without pittie or compassion. And as dangerously doe many men pretending for wisdome play the fooles, delaying the practise of repentance, procrastinating to take the offer of grace, and thus deceiving themselves. They thinke to doe it perhaps tomorrow or afterwards, and so oft cozening themselves, the time they prefixed sliding away, and then another is determined, which likewise goeth away but nothing is done, and so another, till at last time be no more. Take heed you be not deceived in this, I will doe it now and now, but *modo et modo non habet modum.* The Chariot wheeles when they runne, the second runs neare the first all the day long, but never overtakes it. As in a clock the second minute followes the first, but it never overtakes it; so it is with us, this doing of it now and now and to morrow and to morrow, these little distances deceive us and delude us. We thinke to doe it in a short time, and by reason of the neerenesse and vicinity of the time, we thinke we shall doe it easily, but we are deceived with it. As Grashoppers deceive children, when they thinke to lay their hand upon them, they hop a little further and a little further, that in the conclusion they take them not at all. So it is with us, we cozen our selves in that manner, we lose our life, we lose our opportunitie of taking grace, because we thinke it to be so neare: we thinke we can take it the next weeke, or the next moneth, and out of this we are confident it is in our power, and so our time flies away, and we have never part in it.

Dr. *Preston*, New Covenant.

LXXIV.

The Bees labour diligently to get food for the supply of their young, they bring it home to the hive, and lay it up in the combes, but (alas) they are yet never the better for it, for they are fixt in their cels, they cannot stirre forth to take it: therefore they doe more, they bring them food, and put it into their mouths, as oft as they need. The reason why mens hearts are not wrought upon in the Ministery of the word, is because many Ministers labour not the right way to shew men their sinnes, and to convince their consciences, they insist only in generalls, whereas a particular application brings every man his part and portion, and not only sets the dish before him, but cuts him meate and carves it for him.

LXXV.

LXXV.

If any ſhall demand why Bees of all creatures are ſo indefatigably diligent, and with unwearied paines follow their ſweet labours, flying ſometimes abroad in ſtormy ſeaſons, whereby (oft prevented of a returne) they miſcarry in the field. Nay when they are old and gray, feeble and faint, they will venture forth, though they loſe themſelves, for moſt of them die at their worke — *vitam ſub faſce reponunt*. May I not anſwer, firſt becauſe they hope in winter delightfully in reſt and quiet to enjoy their plenty. Secondly, ſome ſay for feare of puniſhment, thoſe that are idle being enforced, but a feare of ſtarving (the worſt of puniſhments) prompts them forth; for if they be not timely furniſhed with a competent proviſion, they muſt inevitably periſh. Thirdly, becauſe it is incompatible to their nature to be idle. They have a naturall propenſitie and inclination to their honey-gathering labours. *Tantus amor florum et generandi gloria mellis.* And this delight, as a watch wound up, carries them ſweetly on through all difficulties and dangers. Three goodly threds which twiſted all together have ſtrength enough to draw the moſt ſleepie ſluggard out of his bed of ſloath and idleneſſe. And if it ſhould be queſtioned, why the people of God are ſo conſtant, ſo faithfull in ſuch fruitleſſe ſervices (as the world accounts them) and not daſhed out of countenance, nor danted by afflictions, but hold on their practice and diligence in a courſe of obedience, maugre the malice and miſchiefes the oppoſitions and contradictions of men and Devills. Firſt, from the hope of a bleſſed reward, which makes them with *Moſes* chooſe rather to ſuffer afflictions with the people of God, then to enjoy the pleaſure of ſin for a ſeaſon. Secondly, from the feare of a juſt puniſhment and a curſe if they ſhould decline and balke the ſervice of God. *For we muſt all appeare before the Judgement-ſeate of Chriſt, that every one may receive according to that he hath done.* And though here were weight enough (as a late learned Divine obſerved) to ſet the moſt ruſtie wheeles a going; yet becauſe theſe two may worke in baſe mindes, and are in themſelves but ſiniſter ends, which many that ſeeme to goe ſtraight may looke a ſquint upon; feare in

Heb. 11. 25.

2 Cor. 5. 10, 11.

Dr. *Stoughton*, The preachers dignitie and dutie.

the fore-ward, and hope and reward in the rere-ward, marshall all their forces, and love in the maine battell, or rather *tota in toto et tota in qualibet parte*, animates every one to valour and victory: punishment is servile, and hope of reward is mercenary. There is a third motive which is the peculiar character of a Christian minde, and that is love. And this winds up a Christians affections to that intention of zeale and fervency. Reward hath an attractive, and punishment an impulsive, but love hath a compulsive facultie: reward drawes him, punishment drives him, but love hales him forward to the discharge of his duty; hope like a tender mother enticeth him with a reward, feare like a severe Master incites him with a punishment, but love like a soveraigne Lord commands him. Hope hales before him, and feare blowes behind him, and both on each side rowe him, but love within like the very soule of obedience, teacheth him a naturall motion.

LXXVI.

Bees are neate and cleanly creatures, and carefull to carrie forth all drosse, soile, and filth, least their hives should be defiled; yet sometimes becaufe of long violent colds, many enemies, weaknesses, becaufe of some distempers, it is requisite for the Bee master to helpe in the purging of them. The Church of God after a long time of peace is apt to gather and contract corruption, as water doth by standing, as the ayre it selfe will, if it have not the wind to purge it. And as it is in the bodies of men, if they be not curiously looked unto (after a certain time) they will gather such a burden of humours, as will rise to a distemper, so that they must be let blood or purged, &c. Such is the infirmitie of mens nature, and the malice of Satan, that enemy to mankind, that the best of Gods people will quickly gather some distemper or other, and stand in need of purging. And we are as much beholding to Gods corrections as to his comforts in this world, without which we should quickly settle upon our dregs.

Dr. *Sibs*, The Churches visitation.

LXXVII.

Bees in the honey-season bestirre themselves; the winter is long,

long, and their enemies many, and therefore much paines must be taken before-hand, or else they will miscarry. And if they be late swarmes, notwithstanding all their diligence, except there be an additionall supply by timely feeding, want cannot be prevented. Were the winter short, robbers few or none, ill weather but a few weekes, as in *Sicilia*, *Ethiopia*, and some Southerne Climates, small preparation might serve the turne; but in our colder regions the greatest paines are seldome too much, sometimes not enough. Whosoever enters upon the profession of religion with vaine hopes of ease and pleasure, doth but delude his owne soule; fore-cast therefore what will fall, and get provision of grace before hand to sustaine. As if a man were to goe a dangerous journey, he provides himselfe of weapons and cordialls, and all the encouragements he can, least he should faint in the way. Whereas he that walkes for his pleasure, provides nothing, he cares not for his weapons, or his cloake, because if a storme comes, he can quickly run under shelter. He that makes religion a recreation, can walke a turne or two for his pleasure, and when any difficulty ariseth, can retire and draw in his hornes againe; but a true Christian that makes it the maine act of his life to please God, armes himselfe for the worst that can befall him; he is resolved not to retire for any trouble or persecution whatsoever that stands between him and happinesse.

Dr. *Sibbs*, Difficulty of Salvation.

LXXVIII.

Man swerving from the end for which he was created, and serving the Devill, the world, and his fleshly lusts, degenerates from his nature, and becomes worse then the very beasts, for they stand firme in their places enjoyned them by God in their creation. The Bee is carefull to doe Gods worke, having no tutor nor remembrancer, but man is senseless and careless to obey his Maker.

Mr. *Cobbs*, The worldlings looking-glasse.

LXXIX.

As the Bee sucks honey out of every flower, and a good stomack sucks out some sweet and wholsome nourishment out of what

Mr *T. Goodwin* The vanitie of thoughts.

what it takes unto it's ſelfe: So doth a holy heart, ſo farre as ſanctified, convert and digeſt all into ſpirituall and uſefull thoughts.

LXXX.

Dr. *Hall*, Occaſionall Meditat.

There is no vice in a man, whereof there is not ſome analogie in the brute creatures: As among us men there are theives by land, and Pirats by ſea that live by ſpoile and blood; ſo is there in every kind among them variety of naturall ſharkers: the Hawke in the ayre, the Pike in the river, the Whale in the ſea, the Lion and Tyger in the deſert, the Waſpe in the hive, the Spider before the hive, ſometimes among the flowers in the Bees walke. And ſee how cunningly this little *Arabian* ſpreads out his tent for a prey, how heedfully he watcheth for a paſſenger? ſo ſoone as ever he heares the noyſe of a Bee (or a flie) a farre off, how he haſtens to his den; and if that ſilly heedleſſe traveller, doe but touch upon the verge of that unſuſpected walke, how ſuddenly doth he ſeize upon that miſerable bootie? and after ſome ſtrife binding him faſt with thoſe ſubtle cords, drags the helpleſſe captive after him into his cave. What is this but an Embleme of thoſe ſpirituall freebooters that lye in waite for our ſoules; They are the Spiders, we the Bees, they have ſpread their nets of ſinne, if we be once caught, they bind us faſt, and hale us into hell. Oh Lord, deliver thou my ſoule from their craftie ambuſhes: their poyſon is greater, their webs both more ſtrong, and more inſenſibly woven: Either teach me to avoyd temptation, or make me to breake through it by repentance; oh let me not be a prey to thoſe fiends that lye in waite for my deſtruction.

LXXXI.

Mr. *Watſon*, Art of divine contentment.

The Bee gives honey, but ſometimes ſhe ſtings: proſperitie hath it's ſweetneſſe, and alſo it's ſting. Sunſhine is pleaſant, but ſometime it ſcorcheth.

LXXXII.

Bees love their Queene, and therefore will fight courageouſly

ouſly in her defence, is ſhe preſent with them, and excites them with her voyce (like a trumpet) they will even to the laſt gaſpe venture their lives, they are in the eye of their Leader, and that makes them bold and daring. And ſhall a Chriſtian pretend love to his God, and not be couragious in the preſence of his great Lord and Maſter, who is ever preſent with him, about him, and in him; undoubtedly, he that hath ſeene God once in the face of Chriſt, dares looke the grimmeſt creature in the face, yea death it ſelfe under any ſhape. The feare of all things flies before ſuch a ſoule: only a Chriſtian is not aſhamed of his confidence. Why then ſhould he not be as bold for his God, as others are for the baſe gods they make for themſelves?

LXXXIII.

Bees long ſhut up in their hives in winter with extremitie of cold, upon a faire calme day when the Sun hath warmed and cheared them with his quickning beames, will ſhew their thankfullneſſe (as it were) in a pleaſing murmur, and dance Lavolta's in many circumgiring motions and circling vagaries in the ayre; and then returning into their hive will make there a lowd congratulatory humming, whereas before they were in a dull and ſilent poſture. And it is as naturall for the new creature (when it feeles the Sunne of righteouſneſſe warming the ſoule, when it taſts of God in Chriſt) to ſhew forth it ſelfe in thankfullneſſe and praiſe: and it can no more be kept from it then fire can keepe from burning, or water from cooleing. It is the nature of the new creature ſo to doe.

Dr. *Sibbs*, com. in 2 Epiſt. ad *Corinth.* c. 1. v. 2.

LXXXIV.

Bees when they goe forth in a ſwarme, will ſometimes be provided of a habitation before-hand, ſome hollow tree or hive not farre remote where the Bees dyed in the precedeing winter; but when they come to it (if not before) they will prepare and purge it of all dead Bees, ſtinking Sandaracha, rotten combes. and where the out-ſides of the combes are drie and criſpie, they will eate and pare off the rotten waxe, as Maſons in building pare off the crumbling out-ſides of the weather-

beaten

beaten stones, (and then make a new front) that they may not after build upon a rotten noughty or weake foundation, their art is not to pull downe edifices, but to build them up, but they doe that which belongs not to them properly, that they may doe that which belongs to them; for they will not build upon an unsound and crumbling foundation. God to make his children trust in him, casts them out of themselves, he will not build on a rotten foundation, he will not build on carnall trust, pride, and covetousnesse, but he will demolish that rotten foundation with afflictions and crosses. He will use such meanes that we shall have small joy to trust in sinne; he will force us by crosses and afflictions to goe from our sinnes, he will demolish that rotten foundation that he may raise up an excellent edifice and frame of the new creature, that shall endure to everlasting. The worke of a Physitian is to cure nature, not to weaken it, but if the body be distempered, it must be weakened before it be strengthened, to make that sound he must give them strong purgations, that shall afflict them and affect them as much as the disease for a while, but all is to make them strong afterwards: So God afflicts us to drive us out of our selves, that we may come at last to trust in him, in whom is all our good and happinesse.

LXXXV.

Bees live like Souldiers in a Camp, and therefore as besieged Cities or Armies that feare an approaching enemy, never dare give themselves wholly over to securitie, but alwayes night and day have their scouts, centinels, *corps du guard*, to keepe watch and ward, least some of their many enemies should by a sudden Camisado surprize or beate up their quarters. We have a hellish enemy the Devill, a roaring Lion, who waiteth for a time of drowsie securitie, wherein he may suddenly seize on us, and teare us in peices. Therefore when there seemes to be most securitie and cessation of spirituall armes, let us conceive the most danger to be at hand, and prepare and arme our selves against the day of battell. For *Hieron*: saith truly, *Tunc maxime expugnaris, cum te expugnari nescis*, thou art most assaulted, when thou feelest no assault. When our adversary seemes to sleepe, he

Ad Hesiod. lib. 2. c. 6.

he watcheth but an opportunitie to run upon us, and deſtroy us. If wee were aſſured that ſome fearefull enemy was upon his march and approaching towards us with fire and ſword; the trumpets ſounding, the drummes thundering, the horſes neighing, and the Cannons roaring; what watch and ward would we keepe? how would every one beſtirre him, and who would not thruſt himſelfe into the danger, and be ready to ſtand in the gap to ſave his Countrey, his life, his friends, his libertie, his goods? But Satan our Arch-enemy, who ſeeketh to deſtroy that which is farre more precious unto us then all theſe things, yea then all the world (*For what ſhall it profit a man if he ſhall gaine the whole world, and loſe his owne ſoule*) is not only approaching, but alſo encamped againſt us with all his forces, and ſhall we now ſleepe in ſinne, and be ſenſeleſſe in groſſe ſecuritie.

Mr. *Foſbroke*, Conſt. & between man and the Devill.

Auguſt Soliloq. 16. Inimicus ut occidat ſemper vigilat ſine ſomno, et nos ut conſtod amus nolumus evigilare e ſomno.

LXXXVI.

Bee-Maſters tell us, that they are the beſt hives which make the greateſt noyſe; ſo that is the beſt conſcience which makes the greateſt noyſe with daily reaſonings before it's owne barre. If we never goe to bed before we have parlied it out throughly with our hearts, then we ſhall find of our ſelves as *Alexander* ſaid of *Antipater*, That he did weare white garments without, and was purple within; ſo we will give no reſt till we find ſome comfortable teſtimony of our amendment.

Mr. *R. Abbot*, The aſſize at home.

LXXXVII.

It is obſervable that the creatures neareſt the earth, are moſt greedy to accumulate, what creature ſtores up ſo much proviſion as the Bee? But the birds of the ayre that flie next heaven, neither ſow nor reape, nor carry into the barne, ſaith our Saviour. We are next to heaven in profeſſion, let us hate to be furtheſt off in converſation.

Mat 6 26.

LXXXVIII.

Bees are ſmall creatures, but have great and dareing ſpirits,

(and almoſt deadly poyſon) though induſtry and diligence can worke much to tame other creatures, yet little on this; by a continued converſe and frequent preſence, their rage and fury may be palliated, but once provoked neare the hive, they acknowledge no reſpect to any; For the moſt part thoſe beaſts have leaſt immanitie, that have moſt ſtrength, Oxen, Horſes, and Elephants are tame and ſerviceable; but Bees and Waſpes have ſtings: So wiſely hath the Creator diſpoſed, that there might not be a conjunction *et potentiæ et malevolentiæ*, that malice and might may not meete; ſo they are ſuffered to have will to hurt and not power, or power and not will.

Mr. *Adams*, Politick hunting.

LXXXIX.

Religion is the greateſt enemy to religion, the falſe to the true, *favos etiam veſpæ faciunt*, Waſpes alſo make combes, though inſtead of honey we find gun-powder.

Tertul.

XC.

The grub or worme in it's firſt ſtate or life is a rude creature, not much delighting in it ſelfe, leſſe delighting others, but when it is ſtirred up to be transmuted, then it is for a time a formeleſſe lump, without any beauty or comelineſſe: but waite a few dayes and the parts will appeare, life will move in theſe yet imperfect members which are at length perfectly formed, and then it comes forth an agill uſefull creature. And as God doth not make the whole fabrick of the world at once, though it was not impoſſible to him being a God almighty, but in the ſpace of ſix dayes, ſo doth God deale with his children: when God creates in his children a new heart, he ſuffers firſt their hearts to be as a rude and maſſie lumpe, full of darkneſſe, and then ſends his holy Spirit into their hearts which illuminates them, and drives away thoſe black clouds of darkneſſe and ignorance, and then he breathes into them the ſweete ayre of his Spirit; And thus out of *Tohu* and *Bohu* is the new creature formed.

Mr. *Cotton*, Expoſ. in Epiſt. *John.* c. 3. v. 2.

XCI.

We ſhould doe as the Bee when ſhe hath ſucked ſweetneſſe from

from the flower, ſhe better concocts and refines it in her owne bodie, and ſo it becomes pure honey. Thus when we have ſucked any precious truth, we ſhould by holy meditation concoct it in our hearts, and then it would become pure profitable honey. Mr. *Watſon*, Chriſtians Charter.

XCII.

The young Bees as ſoone as they have paſt their ſecond birth, and tranſmuted their ſhape and qualities, and are winged and ſtrengthened to flie abroad, preſently fall to their worke, and imitate the elder Bees. And ſo doth the beleeving ſoule, as ſoone as it is borne againe, ſtrengthened and winged with grace from God, makes after him in workes of obedience, holineſſe and praiſes, imitates the examples of the Prophets and Apoſtles, as they have followed Chriſt. Let diſadvantages be what will be, you cannot keepe young Bees in the hive when once tranſmuted and winged, no more can you keepe the regenerate ſoule from working the workes of God, and with holy praiſes aſcending to heaven, when they are once under the line of Chriſts everlaſting love and feele it ſhine mighty hot in them with full face, with perpendicular rayes, but with a preſent rapture make holineſſe their worke and Hallelujahs all their language.

XCIII.

Honey is gathered with much art from great variety of trees and flowers; and joy is a honey, a fragrancy made from above with much picking, chooſing, and compoſing.

XCIV.

Bees are neate ſweete and cleanly creatures, naturally abhorring ſtinking places and ſtrong ſenting herbes. It is true they gather of the flowers of ſome weeds which are bitter and offenſive, but yet the flowers are not (as Broome, Henbane, Mayweed) as your taſt and ſmell may informe you. But where the flowers participate of the ill ſent of the herbes they meddle not at all (as Gallopſia, Cheeſrunnet). And Chriſt puts no

M. *Larkier*, Uſefull inſtructions.

toades in his boſome (ſaith one) nor beleevers wicked men into the intimacy of their affections, puritie will boſome puritie, corruption cannot delight in uncorruption, Heterogeneals will not incorporate, light and darkneſſe are inconſiſtent, gracious and ungodly men cannot live and linke together. A good heart cannot with more pleaſure reſt it ſelfe then in Gods reſting place, in Chriſts ſocietie, in the way of the Spirit, in the Miniſtery of Angels, and fellowſhip of the Saints.

XCV.

In the Common-wealth of Bees all are employed, none are idle; The Commander directs and orders, the Drones are uſefull for procreation, and by their heate very inſtrumentall for the hatching of the young Cure, every one contributes ſomewhat to the publique good. And in the Bee-hive of the Church, there is no pretence for any man to be idle in the profeſſion of religion. Thou haſt not riches, thou canſt not give; thou haſt not place, thou canſt not ſhew countenance to others: but if thou beeſt a child of God, thou haſt the Spirit of prayer, the Spirit of adoption, the Spirit of a ſonne in thee, which enables thee to pray for thy ſelfe and others, there is no Chriſtian but he may doe this.

XCVI.

Bees though they freely act in all their undertakings, yet doe they all with reference to the publique, and in ſubordination to the Queene, whom they not only love, but after a ſort live in; for without her they will live no longer in their old habitation; not at all, except they get under the regiment of another. And this their Queene they delightfully ſerve and obſerve, her (ſilent) directions doe they readily comply withall; once, their carriage in and out of the hive is regulated and ſquared by a love of and awe unto this their Commandreſſe. And it ſhould be with beleevers after this manner, whereſoever we are, or whatſoever we doe in the world, our converſation here muſt be directed by a higher aſpect. The ſhip while it is toſſed in the Sea is ruled by the Poſe ſtarre, that muſt guide it: So in our con-

converſation in the world, the ſtaffe of our converſation may be the buſineſſe we have in the world, but the rule the regiment of all muſt be from heaven, with an eye to God.

XCVII.

A little honey is ſweet, much fulſome: ſuch is pleaſure, whoſe inſinuations are ſo cunning, that you ſhall not perceive your exceſſe, till you be ſick of a ſurfet. Dr. *Hall*, Decad. 4. epiſt. 2.

XCVIII.

Revenge commonly hurts both the offerer and ſufferer, as we ſee in the fooliſh Bee (though in all other things commendable, yet herein the patterne of fond ſpightfulneſſe) which in her anger invenometh the fleſh, and loſeth her ſting, and ſo lives a Drone ever after (indeed lives not long after) I account it the only valour, to remit a wrong, and will applaud it to my ſelfe as right noble and Chriſtian, that I might hurt and will not. *Idem* Med. and Vowes, 1. cent.

XCIX.

Haſt thou found honey, that is, haſt thou found the ſweetneſſe of a mans familiarity or converſation, eate that which is ſufficient for thee, that is, uſe his friendſhip or familiaritie to ſobrietie; not altogether withdrawing thy ſelfe, leaſt he forget thee; not yet too frequently viſiting, leaſt he loath thee; for it is better by ſeldome comming to make thy preſence deſireable, then by frequent viſits to make him weary of thee. Whereupon the ſon of *Sirach* ſaith, *Be not unſatiable in any daintie thing, nor too greedie upon meates:* but the words which follow make it cleare, *Withdraw thy foote from thy neighbours houſe, leaſt he be weary of thee, and ſo hate thee.* *Hugo Card. poſtil in* Proverb. 25. 16. Eccleſ. 37. 29.

C.

Although Bees have ſmall ſtrength, yet have they great anger and inſatiable wrath, and when they violently purſue any, doe *Calvin Comment. in Pſal.* 118.

doe not a little terrifie and affright them. Such is the pertinacious and implacable rage of the enemies of Gods people, that if God did not wonderfully ſtand by, interpoſe and ſupport them they would unavoydably periſh: but they are quenched as the fire of thornes, which although it makes a great crackling noiſe in the beginning, and a greater flame then ſolid wood, yet is ſuddenly extinct and conſumed, ſo that in a word, though wicked men tumultuouſly ſet upon Gods people, their violence in a moment ſhall come to nothing.

THE

THE SECOND CENTURIE.

I.

Emporall occaſions open the mines to digge out ſpirituall inſtruction: For Chriſtians may clime by the ſtaires of theſe inferiour creatures, to contemplate the glorious power of the Creator. A good Chriſtian like the Bee works honey from every flower; ſuffers no action, demonſtration, event to ſtep by him without a queſtion. All objects to a meditating *Solomon* are like wings to reare and mount up his thoughts to heaven. As the old *Romans* when they ſaw the blew ſtones thought of *Olympus*, ſo let every object, though low in it ſelfe, elevate our mindes to mount *Sion*. A meane ſcaffold may ſerve to raiſe up a goodly building; it was once ſaid, *Felix qui potuit rerum cognoſcere cauſas*; now better, *Felix qui potuit rerum cognoſcere caſus*. It is good to know the caſuall beginnings of things. it is better to know their caſuall ends It is good to be a naturall Philoſopher, but better to be a ſupernaturall, a Chriſtian Philoſopher, that whiles we intentively obſerve the creature, we may attentively ſerve the Creator.

Mr. *Adams*, Sinners paſſing bell.

II.

Some uſe flowers only for the beauty or the ſmell, the Phyſitians for health but the Bees for honey. So doe wiſe and prudent perſons apply their ſtudies for the enriching and feeding of their mindes.

Melliſicium ſimilem Joach. Niſai.

III.

As a Spiders web is not therefore better becauſe it is woven out

Lipſius in notis in lib. 1. Politi. c. 1.

out of her bowels; ſo neither is the labour of the learned more contemptible, becauſe as Bees, they gather much from others.

IV.

Conſider a Bee (out of a hive) as a ſolitary Inſect, and it is the moſt helpleſſe and ſhiftleſſe creature that is; If ſhe workes, alone ſhe cannot frame repoſitaries to lay up food; would ſhe breed, ſhe cannot both hatch the young and gather meate. Is ſhe aſſaulted with enemies, alone ſhe hath no defence nor power: Finally, ſhe cannot ſecure her ſelfe from any, much leſſe from the many evills and enemies whereto ſhe is obnoxious. And what is a man out of Chriſt? as a man in a ſtorme that hath no cloathes to hide his nakedneſſe, to cover him from the violence of the tempeſt. As a man in a Huricane, that is out of a houſe to ſhelter him, as a ſtone out of the foundation that is ſcattered here and there as neglected, as a branch out of the vine, without ſap and influence, ready to be caſt into the fire. A man out of Chriſt that is not cloathed with him, that is not built on him, that is not grafted into him, is a deſtitute forelorne and neglected wretch.

V.

The weakeſt creatures have the ſtrongeſt ſhelters. Bees have hives and hollow trees to ſecure them; thus weakneſſe occaſionally is a helpe, for conſcience of weakneſſe makes all creatures ſeeke for ſupply out of themſelves. So the Conies (as *Agur* ſaith) hide themſelves in the rock, they flie to their burroughs; and the Bees to their hives. Man is a weake creature in himſelfe, weake in judgement, weake in affection, but the conſciouſneſſe of our weakneſſe ſhould make us ſeeke for ſtrength out of our ſelves, goe to God in Chriſt, and then he is a kinde of almightie man. *I can doe all things* (ſaith the Apoſtle) *in Chriſt that ſtrengthens me.* A Chriſtian is omnipotent if he depend upon the promiſe, and commit his wayes to God, but he is impotent and weake in himſelfe, it is God therefore that muſt eſtabliſh us.

VI.

VI.

Gnats in numerous multitudes (like clouds) doe nothing but play up and downe in the warme Sunne and ſing; and when they have done ſit downe and ſting the next hand or face they can ſeize upon; ſee here a perfect Embleme of idleneſſe and detraction: how many doe thus miſerably ſpend their good houres? who after they have waſted the ſucceeding dayes, in vaine and meerely unprofitable paſſe time, ſit downe and backbite their neighbours. The Bee ſings too ſometimes, but ſhe workes alſo; and her worke is not more admirable then uſefull; but thoſe fooliſh flies doe nothing but play and ſing to no purpoſe: Even the buſieſt and moſt active ſpirits muſt recreate, but to make a trade of ſport is for none but laſie wantons. The Bee ſtings too, but when ſhe is provoked, theſe draw blood unoffended, and ſting for their owne pleaſure. I would be glad of ſome recreation, but to enable and ſweeten my work. I would not but ſting ſometimes, where is juſt cauſe of offence; but God bleſſe me from thoſe men, which will ever be doing nothing or ill.

Dr. *Hall*, Occaſionall Meditat.

VII.

The Commandreſſe of the Bees is a Queene, a royall creature, and therefore ſhe workes not, it is beneath her dignitie to drudge and toile as the meaner ſubject, ſhe flies ſeldome abroad, communicates little with the world; ſtate procures reſpect and honour to eminent perſons. Though ſhe hath a ſting, yet rather as an Enſigne of power, then an inſtrument of revenge, for ſhe never uſeth it. It is the property of a baſe and dunghilly ſpirit to be vindicative. If I be a Chriſtian, I am a King, ſhall I debaſe my ſelfe in ſinfull practiſes? ſhall I caſt my crowne in the dirt? God hath raiſed me, and made me an heire of heaven, ſhall I abaſe my ſelfe to ſin, and to baſe luſts? (the Devills drudgery) ſo that I cannot rule my owne members, and yet profeſſe my ſelfe to be a King? When we are tempted to ſinne, and to baſe courſes, let us ſay as good *Nehemiah*, when he was moved to flie, *What ſhall ſuch a man as I flie?* ſo ſhould

Dr. *Sibbs*, com. in 2 Epiſt. ad *Corinth.* c. 1. v. 22.

we ſay to any temptation, to baſe courſes of life, what ſhall ſuch a man as I doe this? For a Chriſtian that is a King, that hath a guard of Angells about him, that is the moſt excellent creature in the world, for him to abaſe himſelfe to the world. He that is bred from heaven, for him to have no higher thoughts then the things below, to have an earthly minde or revengefull thoughts, is a ſhrewd preſumption, that he is only a titular Chriſtian, and hath not received the inward and ſpirituall anoynting.

VIII.

All is one to God to make an Angel or a Bee, to create the brighteſt Cherub, or the moſt contemptible flie; for in every creation, no leſſe then an omnipotency muſt be the efficient, and no more then nothing is ever the object.

IX.

If the Queene-Bee be ſlaine, or any wayes miſcarry, the whole hive is overthrowne: but if ſhe be ſafe, though they have weaknings, meete with injuries, ſuffer from enemies, yet they will recover themſelves and out-grow other dangers. A mans darling ſin is Satans ſtrongeſt hold, whither, when by the power of the word he is diſlodged out of other parts of the ſoule, he retires as to his moſt impregnable Caſtle; but if in this he be over-powred by the bleſſing of God on the word of his Goſpell, then is his dominion ſhaken, and the man driven to a deepe deteſtation of himſelfe, throwne downe to the loweſt ſtep of a penitent dejection, he is inegered with thirſty greedineſſe for pardon and grace, and at length forced out of his naturall eſtate.

X.

Bees in their private quarrells are patient and regardleſſe, they neglect and ſlight perſonall injuries; but if their hives be aſſaulted, their Common wealth beleagered or endangered with Waſpes, robbing Bees, or other enemies, they luſtily beſtirre

ſtirre themſelves, fight it out to the death: whereas the Drones as they watch againſt no danger, ſo they reſiſt none, but love to ſleepe in a whole skinne, letting all goe at ſix and ſeven (as they ſay:) like lazie paſſengers in a dangerous leake, will not lay hands to the Pumpe, and yet muſt miſcarry with the ſhips deſtruction. And are not moſt men in the world Drones not Bees? affected perhaps with their owne troubles or reproaches, but ſilent and ſloathfull in Gods cauſe and truth, then they are loath to ſtirre fearing hatred, trouble, obloquie among men. If their owne reputation be called in queſtion, it will not a little ſtartle them, but if Gods name be blaſphemed, his word traduced, his ordinances violated, the courſe of the Goſpell be ſtopped, in the freedome and libertie whereof is the Churches happineſſe and glory, and the failing of it the deſtruction of a people. Yet they are little affected, it goeth not to their hearts, they keepe ſilence as if this of all other things did leaſt concerne them. When *Iehu* approached neare unto *Iezabel*, and eſpied her in her window, after the faſhion of harlots; he cryes out to them with her, *Who is on my ſide, who?* and the Eunuches threw her downe. The Lord ſeemes ſometimes thus to ſay to us in the extremities of the Churches affliction, and he ſeemes to cry to us, who is on my ſide? If then thou be ſilent, that which our Saviour hath, will be here applied, who is not for him is ſure againſt him, and ſo ſhall be accepted in the day of accounts.

Dr. *Sclater*, Com: on *Mal.* c. 3. v. 16.

2 King. 9. 32.

Mat. 12. 30.

XI.

Waſpes and Hornets are very noyſome creatures, and therefore we ſeek their deſtruction, Nay burne up neſts and young, and that before they have injuried us or ours, only becauſe we know, what they would doe, if they be ſuffered to live and flie abroad. And ſhall poore Mortals thinke it much, if God who knowes our thoughts a farre off, and the principles within us, and what men would doe if occaſion be offered, which for the preſent they know not of themſelves, as *Hazaels* anſwer to *Eliſha* imports, *Thinkeſt thou*, &c. No wonder if the Lord cuts off many in their youth and infancy, becauſe he knowes their nature, that they would doe this and this. Such paſſages of his providence there may be, as to cut off children and young men

2 King 8. 13.

Dr. *Preſton*, Gods Lamentatie.

out of the foreſight of the evill that they would doe to his Church, becauſe he knowes their thought a farre off.

XII.

The Drones are alwayes idle, obſerve them as often as you will, and you ſhall never find them carefully endeavouring their preſent or future good. Bees, though laborious creatures, yet if you come to the hive in winter, eſpecially in extreame froſts and colds, are ſhut up, none appeare, or if in a warme day they flie a little abroad, yet they bring nothing home, contribute nothing to the publique treaſury, they then ſeeme to be as careleſſe and as thriftleſſe as the Drones. But the Drones are conſtantly idle, and therefore at all times you find them alike careleſſe; come this day and you ſee them to gather nothing, and come another time and you find them gathering nothing. But the Bees though they be ſometimes hindred for want of the externall favour of the heavens that they cannot gather, as in the winter time. Yet when the Sunne returnes in the Spring, and the plants and trees begin to put on their Summer roabes, and the heavens are cleare and ſmile upon them, then they diligently follow their delightfull labours. Vigorous and ſpiritfull actions are not alwayes infallible characters of life; a man may be a living man and yet in a ſwoone, no action left in him: a man may be a living Chriſtian, and yet be in ſome deficiency of ſpirit, and in ſome ſwoone, his ſpirits bound up and not in caſe for action alwayes in any kind; ſo that actions are not ſure characters of being in the right way to true happineſſe. For a godly man may be like a tree which may have life in it, when it hath neither fruit nor leaves upon it, as in the winter time; but in another ſeaſon, they are more or leſſe fruitfull, for the Bias of their ſoule is ſet to God-ward, and to heaven-ward, and though it may by a rub be put out of it's courſe, yet becauſe the qualification of their ſoules are heavenly, their affections are changed and turned, they will be exerciſing themſelves in ſpirituall duties: whereas wicked men in whom is no change of heart, are never heaven-bound; they may pretend it ſometimes and make faire ſhewes and promiſes, as the Drones in a faire day flie abroad with many a circling motion, and a great hum-

Dr. *Stoughton*, Righteous mans plea to true happineſſe.

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ming noiſe; but obſerve them, it it not to add to the publique ſtore, but that they may with better ſtomacks devoure the Bees labours. Thus the Phariſees performed many duties, made long prayers, but to devoure widowes houſes.

XIII.

Every drop of honey is honey, and has the nature and definition of the whole, it is throughout like to it ſelfe; ſo our felicitie above is homogeneall, heaven is all heaven, every corner of heaven, is a heaven; every thing that is taſted a heaven; every thing that is ſmelt a heaven; every thing that is looke upon or meddled [illegible], a heaven, a full felicitie to the ſoule.

XIV.

Bees are temperate feeders, but when they are violently robbed of their honey, or forced from their hives, they will then eagerly and glutton-like fill themſelves, and ſcarce give over without ſmoaking or much diſturbance: Now they are like to loſe all which they had painfully laboured for, and charily ſhut up with waxen covers, as under lock and key, till a time of ſcarcitie; And they reſolve therefore to have a ſhare before all be gone. And thus many wicked men, having had by legall terrours a fore-taſt of hell fire before their time after their deliverance, grow a great deale worſe, and knowing their time to be but ſhort, fall on earthly delights more furiouſly, and graſpe the pleaſures of the world with more greedineſſe and inſatiable importunitie.

XV.

A Bees ſting eaſily enters in, and when the Bee is flowne away, yet the ſting remaines and workes it ſelfe with more violence deeper, diffuſing thereby the venome more ſtrongly, and cauſing greater dolour and paine; and the longer it continues, with more difficulty is it at laſt extracted: ſo that no man that knows the danger, except he have the perfection of a mad man, would run the hazzard of the anguiſh by delaying to pull it out.

And:

And ſuch is ſinne, it eaſily pierceth the ſoule, and when the tempter is gone, yet once intertained, it eaſily winds it ſelfe further in; And having the plea of continuance and cuſtome will not be eaſily ſhaken off: ſhall a Blackmore change his skinne, or a Leopard his ſpots in three or foure dayes, which they have contracted in twenty or thirtie yeares. Oh no, but (as a late learned and holy Divine obſerveth) the longer thou puts it off and deferreſt, the more unfit thou ſhalt be to repent, thy cuſtome in ſinning will exerciſe more tyrannie over thee, the curſe of God for going on ſtill in thy treſpaſſes will be more heavy on thee; The corruption that lurked in thy owne boſome will be more ſtrong againſt thee; Thy underſtanding will be more darkened with helliſh miſts of ignorance; Thy judgement more perverted; Thy will more ſtubborne; Thy memory more ſtuft with ſenſuall motions; Thy affections more rebellious; Thy thoughts more earthly; Thy heart more hardened; Thy conſcience more ſeared, and thy ſelfe more ſould to ſinne, And every day thou continueſt in this eſtate of darkneſſe, thou art much more the child of Satan then thou waſt before.

Mr. *Bolton*, Inſtruct. for comf. afflict. conſc.

XVI.

Bees have many enemies, the Mouſe, the Waſpe, the Spider, beſides robbing Bees their worſt enemies; it is no wonder then if they keepe a continuall guard, leaſt they ſhould be ſurprized, and examine every one that goes in and out, and are preſently in alarmes upon the leaſt motion or diſturbance; their ſafety and well-being lies at ſtake. A beleevers condition is obnoxious to dangers, very liable to temptations, and ſhall we not walke circumſpectly, and ſtand alwayes upon our defence? We are naturally ſubject to ſo many batteries and breaches, by the aſſaults of Originall ſinne, and other implacable enemies to our ſoules, that there is extreame need of perpetuall watch and ward, of repenting and repairing dayly, leaſt the new man be too much oppreſt, and be often ſurprized with the many and cunning encounters of the old *Adam*. The conſideration of this ſhould prevaile much with us, to ſet a dayly guard about our ſoules *David* was very watchfull, yet he was ſurprized unawares by the ſudden rebellion of his heart. We ſhould therefore

fore obſerve our hearts, as Governours doe rebells and mutinous perſons. We ſee to what an exceſſe ſin growes in thoſe that denie themſelves nothing, nor will be denied in any thing, who if they may doe what they will, turne all libertie into licenſe, and make all their abilities contributaries to the commands of over-ruling and over-ruly luſts.

XVII.

What a pitie it is to ſee theſe profitable induſtrious creatures fall ſo furiouſly upon each other? and thus ſtinging and biting kill each other in the very mouth of the hive. I could like well to ſee the Bees doe this execution upon Waſpes, enemies to their common ſtock, this favours but of juſtice; but to ſee them fall foule upon thoſe of their owne wing, it cannot but trouble their owner, who muſt needs be an equall loſer by the victory of either. There is no more perfect reſemblance of a Commonwealth, whether civill or ſacred, then in an hive: the Bees are painfull and honeſt compatriots, labouring to bring waxe and honey to the maintenance of the publique ſtate; the Waſpes are unprofitable and harmfull hang-bies, which live upon the ſpoyle of others labour, whether as common Barrettours, or ſtrong theeves, or bold Paraſites, they doe nothing but rob their neighbours. It is an happie ſight when theſe feele the dint of juſtice, and are cut off from doing further miſchiefe, but to ſee well affected and beneficiall ſubjects undoe themſelves with duells, whether of law or ſword, to ſee good Chriſtians of the ſame profeſſion ſhedding each others blood upon quarrels of religion, is no other then a ſad and hateſull ſpectacle, and ſo much the more, by how much we have more meanes of reaſon and grace to compoſe our differences and correct our offenſive contentiouſneſſe. Oh God, who art at once the Lord of Hoſtes and Prince of peace give us warre with ſpirituall wickedneſſes, and peace with our brethren.

Dr. *Hall*, Occaſionall Meditat.

XVIII.

Creatures have their inſtincts there is a naturall inſtinct in every creature to that feeds it; Bees goe naturally to the flow-

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ers by an inſtinct; ſo the ſpirituall ſoule that hath the life of Chriſt, runnes to whatſoever may feede and maintaine that life. All the creatures as ſoone as they are borne, runne, they know whither to goe to ſuck, becauſe that is ordained by nature for their preſervation; ſo there is an inſtinct in the ſoule to carry it, to that that feedes and maintaines it.

XIX.

Let a ſwarme be hived never ſo orderly, and the hive beforehand rub'd and prepared carefully, let it be covered and ſhadowed from the Sunne, and in a word, in the beſt manner accommodated, yet if the Queene-Bee be wanting, there is nothing but diſcontent, confuſion, and hurly-burly, and after a hopeleſſe ſearch, a finall departure. Whereas a meane habitation with her preſence will give full content and ſatisfaction. Had we a Magazine of comforts, were we poſſeſt of heaven it ſelfe, with all it's glory without Chriſt, yet heaven without him would not be heaven. It is better therefore to be in any place with Chriſt, then to be in heaven it ſelfe without him; all delicacies without Chriſt are but as a funerall banquet when the Maſter of the feaſt is away, there is nothing but ſolemneſſe: what is all without Chriſt? I ſay the joyes of heaven are not the joyes of heaven without Chriſt, he is the very heaven of heaven.

Dr. Sibbs, St. Pauls ſtraite.

XX.

Bees by a naturall ſagacity can foretell a ſtorme, yet ſometimes are they overtaken with unſeaſonable and rainie weather, but then doe they hie themſelves apace homeward getting under the Lee-ſide of a hedge, and at laſt ſecure themſelves in their hives: but as ſoone as the tempeſt is over, and the Sunne breakes out they are abroad againe, forgetting their former danger. Many men in their outward croſſes and afflictions, while the ſtorme and tempeſt of Gods wrath beates ſore upon them, run to God as their rock, and enquire early after him, but when once a hot gleame of former health and proſperitie ſhines upon them againe, they hie as faſt out of Gods bleſſing into

into the warme Sunne (as they ſay) from ſorrow, to ſin, to delight in ſenſuality, from ſeeking God to ſecurity in their old wayes.

XXI.

He that goes about to cure the wound of his conſcience for ſinne, with ſenſuall delight; doth as one that is ſtung with a Waſpe, and rubbes with a nettle the ſmarting place.

XXII.

As Bees when they are once up in a ſwarme, are ready to light upon every bough, ſo rebels being riſen up by the commotion of ambitious leaders, are apt to follow every *Sheba*. It is unſafe for any State that the multitude ſhould know the way to an inſurrection, the leaſt tract in this kinde is eaſily made a path.

XXIII.

As *Jonathans* honey was ſweet in the mouth, but bitter in the ſoule; for behold his honey was turned into gall. And if the eyes of his body were enlightened, the light of Gods countenance was clouded by the act: So is it with every ſin, for though ſtollen waters be ſweete, yet he knoweth not that the dead are there. Dr. *Hall*, Contemplat. lib. 12.

XXIV.

It is obſervable in the old Law, that God hated the very reſemblance of the ſinne of pride, he would have no honey mingled in their offerings; *Ye ſhall burne no leaven, nor any honey in any offering of the Lord made by fire*. Indeed Leaven is ſowre, but what is there in honey that ſhould offend? why no honey? becauſe honey when it is mingled with meale or flower, maketh it to riſe and ſwell; Therefore the people of *Iſrael* muſt mingle no honey in their offerings: this was to let us ſee how God hateth the reſemblance of the ſinne of pride. Levit. 2. 11. Mr. *Watſon*, Chriſtians Charter.

XXV.

Some Bee-Maſters will be over-diligent to kill the Drones, becauſe ſometimes when they are ſupernumerary, they will not only peſter but prejudice the hive; and at other times deceive the expectation of ſo large a tribute as they looke for from them: and yet in the meane time are negligent, or not ſufficiently carefull to prevent the devouring Waſpes or robbing Bees, which in a few dayes will conſume more then the Drones in a whole Summer. Bee-Maſters ought to be carefull about the former, but moſt of all of theſe, becauſe of that ruine and deſolation that is quickly occaſioned by them. As a Shepheard ſhould watch his lambes from flies, but moſt of all from Wolves and Foxes: Sure he is but a ſorrie Shopheard, to kill the maggots in his ſheepe, and let the former worry at pleaſure. And ſurely (ſaith one) he is a ſorry Magiſtrate, that ſtocketh and whippeth and hangeth poore ſnakes when they offend (though that is to be done too) but letteth the greater theeves doe what they liſt, and dareth not or careth not to meddle with them. Like *Saul*, who when commanded to deſtroy all the *Amalekites*, both man and beaſt, ſlew indeed the Raſcality of both, but ſpared the greateſt of the men and fatteſt of the cattell, and ſlew them not.

Mr *Sanderſon*, Ser. on *Joh.* 19. 14.

XXVI.

Mothes are ſuppoſed to be offenſive to the Bees; ſure I am, if the Bees be few they will breed their blots in their combes, and quite ſpoyle them, and thereby force thoſe few to deſert the hive; for remedy whereof it is preſcribed by ſome to ſmoke the combes, and ſo to expell and chaſe them away. Which practice myſtically informes Magiſtrates, that if they would be rid of thoſe Mothes and Gnats that ſwarme about the Courts of Juſtice, and will be offering to buzze at their eares falſe reports of their brethren, they ſhould caſhiere and ſmoke them away. Magiſtrates ſhould doe well therefore to begin reformation at home, and if any of them have a ſervant that beareth not well deſervedly, to put him away out of hand, and to get an honeſter in his Roome.

XXVII

XXVII.

Bees, though chilled and dead with cold, or drowned in water, if in a convenient ſeaſon they be laid neare the fire, or in a hot Sun-ſhine, will revive after a while, and recover as if they had never miſcarried. For there is ſome hidden though undiſcerned life, and by the ayde of that little remainder of vivifying power (which was more ſtrong originally, and is not yet totally extinct) now further called forth and wrought upon by adventitious heate, there is a new quickning and life. So by the awaking of the North wind and coming of the South, I meane the bleſſed Spirits breathing upon a regenerate heart, ſtifled dangerouſly with ſome peſtilent luſt, by ſtirring up and refreſhing the retired and radicall power of grace, that immortall ſeed of God never to be loſt, will ſweetly and graciouſly bring it againe to it's former ſpirituall comfortable temper and conſtitution. * The Lords choſen may fall from their outward prerogatives, and from the fruits: but that divine nature ſtill abideth in them: and it is only with their grace, as it is with the mind in diſtempers of Melancholie and Phrenſie; with the Sunne in Eccliſes; with the tree, when leaves and fruit faile it; with the naturall life, when it moveth not, nor yet breatheth ſenſibly, which in diſeaſes of the Mother is often diſcerned.

* Dr. *Holland* Divinitie profeſſor in *Oxford*. Moderating in this queſtion holden negatively, *An juſti fides poſſit ab ipſo amitti, aut finaliter deficere.*

XXVIII.

The ancients preſcribed (as for other cauſes ſo for this alſo) to ſtop up the hives every third day; that the Bees might when they were ſet at libertie, with greater earneſtneſſe and delightfull diligence ply their labours. And we find by experience, when they have been a while ſhut up and impriſoned by unſeaſonable weather, they follow their worke more eagerly, on the firſt opportunitie (as a ſtreame ſtopt for a little while, will breake out with greater violence after) they will now loſe no time, but be at their labours both more early and late, then when they were not kept in; Nay in ſuch weather when (had they not been reſtrained before) they would have laine ſtill aſleepe in the bed of eaſe in their hives. Sometimes the Lord

Mr. *Bolton*. Inſtruct. for comf. afflict. conſc.

may for a time retire the light of his countenance, and ſenſe of his graces from his children, for triall, quickning, and exercise of ſpirituall graces, that they may put forth themſelves with more power, improvement, and illuſtriouſneſſe: the cold comfort of a diſertion in this caſe, being unto them as water caſt upon the Smithes forge, to make ſome of them eſpecially to burne inwardly as it were in the meane time with new intention and heate, to breake out and flame more gloriouſly: there are many gracious diſpoſitions and indowments in the Chriſtians heart, which would never ſee the light, at leaſt with ſuch eminency, were it not for this darkneſſe: the brightneſſe of lampes languiſh in the light but they burne cleare in the darke: the ſplendor and beauty of the Saints, would never appeare were there no night.

XXIX.

Bees troubled a while at the hive will be very angry, and by and by very numerous, and ſo unreſiſtible, for their fury and their numbers increaſe together; perhaps but a few at firſt aſſault you, but being much oppoſed, they call out many partakers, and in a little time a few will prove a multitude: as rivers grow greater and greater, the further they are off from their ſprings, the more they enlarge their channels untill they emptie themſelves into the Ocean. Stormes we know ariſe out of little guſts. The firſt riſings of ſin are to be look't unto, becauſe there is moſt danger in them, and we have leaſt care over them: corruption till it be over-powred by grace, ſwelleth bigger and bigger, ſo that like ruſt it will by little and little eate out all the grace of the ſoule. There is no ſtaying when we are once downe the hill, untill we come to the bottome. When the heart begins once to be kindled, it is eaſie to ſmoother the ſmoke of paſſion, which otherwiſe will fume up into the head, and gather into ſo thick a cloud, as we ſhall loſe the ſight of out ſelves, and what is beſt to be done. Cruſh therefore the firſt inſurrections before they come to breake into open rebellions; little riſings neglected cover the ſoule, before we are aware, ſtifle them in their birth, ſtop the beginning, and ſo ſoone as they begin to riſe, let us begin to examine who raiſed them, and whither they are about to carry us.

Dr. *Sibbs*. The Soules conflict.

XXX.

The Bee never ſtings, but payes the price of it with her life. By this God inſtructs us, that we ſhould not wrong our neighbours, for we our ſelves ſhall if not firſt yet worſt ſuffer, and they perhaps receive little or no prejudice, but we ſhall be as ſure as the Bees to dye for it. And yet the ſonne of *Syrach* praiſeth that creature, ſaying, *The Bee is ſmall among fowles, and her fruit hath the beginning of ſweetneſſe.* But this gives her no ſecurity to eſcape death, if ſhe ſtings ſhe muſt periſh; And if her many excellencies will not exempt or free her from deſtruction if ſhe doth ill, much leſſe ſhall we. We are moſt ſavage beaſts, we firſt wrong our neighbours, who never injuried us; Nay we are farre worſe in this reſpect then Bees; For if you ſuffer them to live in their hives, and by moleſting and vexing of them put them not upon a neceſſitie of defence, they will never hurt, never injure, never ſting, but goe their wayes and follow their buſineſſe. But thou who art a reaſonable man, dignified with ſo much honour and glory imitates the beaſts, and that towards thoſe that are of the ſame ranke with thee; wrongeſt, hurteſt, devoureſt thy brother; what ſaith *Paul*, *Why doe ye not rather take wrong? why doe you not ſuffer your ſelves to be defrauded, nay you doe wrong and defraud, and that your brethren.* You ſee then you wrong your ſelves, when you wrong others, and that you receive a courteſie when you are injuried.

Chryſoſt. com. in Epiſt. primam ad Theſſ. c. 5.

1 Cor. 6. 7.

XXXI.

Bees will not continue in a ſtinking or impure hive, and therefore they that delight in them prepare the ſtooles where they ſet them with perfumes, ſweet ſmelling boughs, and fragrant flowers, and other delightfull things, whereon the Bees when they goe forth of the hive may light, leaſt ill ſavours ſhould force them to forſake their ſtations. And thus deales the holy Spirit, our ſoule is the hive, accommodated and furniſhed with ſweet ſpirituall gifts and graces, but if there be bitterneſſe and anger and wrath, he will forſake ſuch hives. And therefore the bleſſed

Ejuſdem. com. in Epiſt. Pauli ad Epheſ. c. 4. t. 4.

blessed and wise husbandman (namely, St. *Paul*) doth endeavour to trimme and prepare our hives (our soules) and that without knife or any other iron instrument; And calls us a spirituall Bee-fold, which yet he first purgeth with prayers, with labours and all other things necessary hereunto.

Ephes. 4. 30, 31.

XXXII.

Bees with their swift and nimble wings fly from flower to flower, and draw out the latent native sweetnesse with a harmlesse unprejudiciall robbery, that therewith at length they may provide and afford sweet honey for the sonnes of men: So the Ministers of the Gospell are sollicitously carefull with the light wings of meditation, to light on the pleasant and delightfull gardens of the Scriptures, that they may pleasingly instill and drop in the sweet honey of faith into the hearts of their hearers.

Ejusdem Com. in Psal. 115. 1. 10.

XXXIII.

Bees prepare their food in Summer, they borrow not, they beg not, but exercising their naturall endowments, are diligent in labour, and that without force or compulsion, and never give over while the weather and season serveth. And although they be weake and small creatures, yet with their nimble wings flie through the vallies, and over the mountaines, the woods and forrests, though some miles remote and distant from their habitations, gathering of every profitable tree and flower, and not only the elder but the younger also. And are images herein of and patternes to thriftie housholders, who diligently labour themselves and excite and encourage all theirs from their youth to provide for future; secondly, their great prudence appeares in understanding the seasons for their gathering, providing in the Summer against winter, for if weather would give leave, they should in vaine seeke for honey in the winter; thirdly, so great is their sedulity and diligence, that they are not altogether idle in the night, but then trimme their hives by biting off the staring and offensive strawes, eating downe their rotten combes where there be any, pulling forth their dead spoile which they carry

carry forth in the day, hatching their young, and probably feeding of them: fourthly, their justice, they rob not those that are laden, but each gathers for her selfe and all the rest, for they are politicall: fifthly, their astrologie in foreseeing change of weather, when they will not venture farre from their hives: sixthly, this is also praise-worthy and imitable, that they carry forth their dead to buriall, and not only the Pismire as *Franzius* affirmes. *Franzius hist. animal tract. 4. c. 14.*

XXXIV.

Waspes are bold and sawcie, whatsoever fruits, flesh, plummes sweet meates you have, they will impudently intrude, and if they be not prevented carry away a portion. And such are troublesome and vaine thoughts, crowding into our best and most religious services. *Abraham* must drive away the birds from the sacrifices, and we must continually watch against vaine and evill thoughts, which will alwayes come before they be sent for, but let them find entertainment accordingly. Gen. 15. 11.

XXXV.

If nature teach Bees, not only to gather honey out of sweet flowers, but out of supposed bitter; shall not grace teach us to draw even out of the bittereſt condition something to better our soules.

XXXVI.

Bees are affected with a deep degree of love to their Lady, with whom (having nothing) they esteeme themselves happie; but without her (in the greatest plenty and fullnesse) are full of perplexitie and trouble. If she goeth forth of the hive, they (leaving house, children, goods) follow after, and stay where she abides; If she being weary and faint fall by the way, they will encompasse her, stay with her (and returning no more to their forsaken full-stored hives) starve with her, rather then leave and desert her. This ardent love and affection planted in them by nature, eates up and devoures all other desires, and over-

over-eager delights in any contentments as worthleſs and emptie. So that the Sun-flower doth not more naturally turne towards the Sunne, and the iron to the Load-ſtone, and the Load-ſtone to the Pole ſtarre, then the domeſtick honey-Bees embrace and affect the Queene-Bee. And a beleeving ſoule is as much nay more deeply and dearely enamoured of her beloved, advancing Jeſus Chriſt higheſt in his thoughts, and prizing him farre above the pleaſures and profits and glories of the whole world; he ſo ſets his eye and longing upon him, as to hold himſelfe for ever loſt without his love, and for the gaining of it if need were would he paſſe through a peece of hell. Thus are the current of his beſt affections and all the powers of his humbled ſoule bent and directed towards him. He vowes and gives up the flower and prime of all his abilities loves, joyes, endeavours, performances in any kind to his higheſt Majeſtie. He conſecrates all the powers and poſſibilities of body and ſoule to doe him the beſt and utmoſt ſervice he can any wayes deviſe, and ſtill grieves and walkes more humbly, becauſe he can doe no better ſervice.

XXXVII.

Bees worke all in common, feed in common, breed up their young in common: Each provides for his fellow as for her ſelfe, every one is affected and ſympathizeth in a common danger, as if it were her owne alone. In a word, each doth fight with undanted reſolution, in the defence and preſervation of her fellow, as if it were her own particular injurie. How many baſtard-Chriſtians are there that ſympathize not with their brethren, whoſe hearts are neither enlarged with lightſomneſſe, nor yet eclipſed with griefe, as they heare of the proſperitie or oppreſſion of Gods people. Pitileſſe and hard-hearted *Canniballs*, who all this while ſo many noble limmes of that bleſſed body of the reformed Churches have laine in teares and blood, did never take to heart, to any purpoſe, or trouble themſelves at all with their grievous troubles, but have ſottiſhly and ſecurely laine at eaſe in *Sion*, not helping the people of God ſo much as with a hearty fellow-feeling, wraſtling with God in prayer, ſet dayes to ſeeke the returne of Gods face and favour, men they

Mr. *Bolton*, Inſtruct. for comf. afflict. conſci.

they are of the world, which have their portion in this life, who feele nothing but worldly loſſes, know nothing but earthly ſorrowes, reliſh nothing but things of ſenſe. If they be ſtung with a deare yeare, they howle and take on immoderatly: but let *Joſeph* be afflicted, Gods people in diſgrace, the daughter of *Sion* weep bitterly, and have none to comfort her, theſe mercileſſe men are no whit moved, they have not a teare, a groane or ſigh to ſpend in ſuch a wofull caſe.

XXXVIII.

Waſpes are very dangerous enemies to Bees, being bold and ſtrong, they will firſt prey on dead Bees, which they divide and carry by halves to their neſts; but they quickly proceed further and venture into the hives, and rob the combes, and will after come with ſuch numbers that they will deſtroy the whole ſtock, unleſſe they be timely prevented, which muſt be done not ſo much by obſerving and killing them neare their hives, but finding out their neſts, and deſtroying them altogether. For the ſubduing of our ſelves it is good to follow ſin to the firſt hold and Caſtle, which is corrupt nature, the ſtreames will lead us to the ſpring-head: indeed the moſt apparant diſcovery of ſin is in the outward carriage, we ſhall ſee it in the fruit before in the roote; as we ſee grace in the expreſſion before in the affection, but yet we ſhall never hate nor ſubdue ſin throughly, till we conſider and fight againſt it in the poyſoned root from whence it ariſeth. It is a good way upon any particular breach of our outward peace, preſently to have recourſe to that which breeds and foments all our diſquiet: Lord, what doe I complaine of this my unruly paſſion, I carry a nature about me, ſubject to breake out continually on any occaſion. Lord ſtrike at the roote, and dry up the fountaine in me, for otherwiſe, though the ſtreames were ſtopt, and the branches cut off, and the ſparkles quenched, yet there would be a perpetuall ſupply, as long as the poyſon-full roote remaines.

Dr. *Sibbs*, The Soules conflict.

XXXIX.

Many Bees (eſpecially when the gathering ſeaſon is over,

and the ſtate of flowers decayed, about *Auguſt* will be curiouſly prying into their fellowes hives: at firſt a few give the onſet, and if they be let alone unreſiſted, or weakly oppoſed, then they double and treble their forces, fetching at their returne more of their companie, and violently make a prey of all. But if theſe ſcouts and ring leaders, as they preſſe in be beaten out, roughly intertained, and ſtoutly oppoſed and fought withall, they will then by degrees deſiſt, and at laſt quite give over. Vaine and wicked thoughts, if men give way unto them without checking the motions of them, will preſſe (as buſily as flies in Summer) into the heart, but a good heart will not owne them, nor allow himſelfe in them, but ſtands at ſtaves end with them, caſts them off as hot water doth the ſcumme, or as the ſtomack doth that which is noyſome unto it. They find not in it that intertainment which they have in carnall hearts, where the ſcumme ſeeths in, which are ſtewes of uncleane thoughts, ſhambles of cruell and bloody thoughts, exchanges and ſhops of vaine thoughts, a very forge and mint of falſe politick and undermining thoughts, yea often a little hell of confuſed and black imaginations.

XL.

Dr. *Hall*, Occaſionall Medit.

See you that narrow mouthed glaſſe which is ſet neare to the hive, marke how buſily the waſpes and flies reſort to it, being drawne thither by the ſmell of that ſweet liquor wherewith it is baited; ſee how eagerly they creepe into the mouth of it; and fall downe ſuddenly from that ſlippery ſteepineſſe into that watry trap from which they never riſe; there, after ſome labour and wearineſſe they drowne and die; you doe not ſee many of the labouring Bees looke that way; they paſſe directly to their hives without any great notice taken of ſuch a pleaſing baite. Idle and ill diſpoſed perſons, are drawne away with every temptation, they have both leaſure and will to entertaine every ſweet allurement to ſin; and wantonly proſecute their owne wicked luſts, till they fall into irrecoverable damnation: whereas the diligent and laborious Chriſtian, that followes hard and conſcionably the workes of an honeſt calling, is free from the danger of theſe deadly enticements, and layes up honey of com-

comfort againſt the winter of evill: happie is that man who can ſee and enjoy the ſucceſſe of his labour, but how ever, this we are ſure, if our labour cannot purchaſe the good we would, it ſhall prevent the evill we would avoyde.

XLI.

A Bee ſtinging a dead body takes no hurt, but ſtinging a live body loſeth both ſting and life together. In like manner, death ſo long as it ſtung mortall men only, which were dead in ſinne was never a white the worſe, but when it ſtung Chriſt once who is life it ſelfe, by and by it loſt both ſting and ſtrength. Therefore as the Brazen Serpent was ſo farre from hurting the *Iſraelites*, that contrariwiſe it healed them; after the ſame ſort death is ſo farre from hurting any true *Iſraelite*, that on the other ſide, if affliction as a fiery Serpent ſting us, or any thing elſe hurt us, it is helped and redreſſed by death. Dr. *Playfer.* The meane in mourning.

XLII.

That honey is ſweete, it is not a conceit only, but the naturall qualitie of it is ſo; yet out of a taſt of the ſweetneſſe, to thinke we cannot take too much of it is a miſconceit paid home with loathſome bitterneſſe; though our fancy be readie to conceive a greater bleſſing in outward good things then indeed there is, yet we muſt not deny them to be bleſſings.

XLIII.

Bees when they are abroad at their worke, if the clouds overcaſt, the ayre grow darke, there be any prelude of a ſtorme which they are very ſenſible and apprehenſive of, ſpeedily and in haſt, thick and threefold repaire to their hives for ſhelter and ſecurity. And beleevers never pray ſo heartily, deny themſelves ſo throughly, cling ſo faſt to God, as when a ſtorme is towards, or when they are overtaken by a tempeſt of perſecution.

XLIV.

Bees are not querulous complaining or diſcontented creatures,

tures, for when they have with many a ſore dayes labour and heavie burden filled their hive, and thereby furniſhed themſelves againſt a winters want: yet if they be driven and robbed of all, have left neither meate nor materialls to put in any, yet will, if the weather ſerve, ſpeedily and chearefully renew their labours, and with double diligence ſeeke out for a future ſupply. And ſhall beleevers thinke much to ſuffer the ſpoyling of their goods, all that they have travelled and ſweat for, and when they have by many a deare dayes labour got a little ſomwhat together, then to be ſpoyled of all in a moment, ſeeing they know they have in heaven a better and more endureing ſubſtance.

Heb. 10. 34.

XLV.

When the worme dyes, which is a more imperfect creature, then it revives againe, but is quite another from what it was before in every part and member: before it was unable to act for it's owne preſervation, or the good of others, could not move out of it's place; in a word, doe nothing but eate what was brought unto it; but after a tranſformation and renovation, it is agill and active, laborious and profitable. And in the new birth, *ſi licet parvis componere magna*, there muſt be a mortification of the old man, and then an univerſall change and alteration in the whole man. For a new Spirit is univerſall, it goes through the whole man, leavens the whole lumpe, the new nature is common to all the powers, not like a little ſpring that takes beginning in ſome peece of ground, and ends in the ſame, but like the great Ocean that encompaſſeth the whole world. And as it is univerſall, ſo it is alterative too, it amends not the out-ſide onlŷ, but the inward man alſo. It gives a man a new temper, it makes him that was fearfull and timerous, become bold and couragious, him that was peeviſh and paſſionate, to be of a meeke and quiet ſpirit, him that was dull and cold, to be zealous and fervent; it makes him with *Oneſimus* profitable to himſelfe and others.

Mr. *Harris*, Treatiſe of the new Covenant.

XLVI.

Bees have a naturall and in-bred love to their Queene, which makes

makes them in her abſence long after her, nay unweariedly ſeeke for her without any other content or ſatiſfaction, but her preſence and company, and finding her they will not be ſevered nor ſundered, pull them away as oft as you will from her, yet ſtill they will draw neare and cling to her. Carry her whither you will, if they be ſenſible of it, you have their company alſo. How doth this condemne the want of love and affection of many ſubjects to their Governours, of many people to their God? whom a little pleaſure or profit ſhall eaſily divide. But though it be thus with the moſt, yet there is a diſpoſition in the Saints to long after the Lord, and it is not an emptie choice that conſiſts only in affection, or in the naked reſolution of the mind, but it is ſuch a choice as hath ſtrong affections running together with it, a ſtrong inclination carrying the ſoule to him; ſo that though he be hindred many times, and often in his life unruly luſts come, and make a ſeparation between the Lord and him, yet he cannot abide to be long from him. It is the Lord that he loves, he cannot for his heart chooſe another Maſter, but it is he with whom he will dwell, live, and die. And if ſome have quite loſt their naturall affections to their God, no wonder then, if they are weake in their affections to their Governours, and bandy them as Tennis-balls of State, and ſmite them into every hazzard. I beleeve it not to be the practiſe of knowing people or Chriſtian Nations, among whom we looke not to heare of a king-killing poſition, except from the upſtart broode of perverted ſtatiſing Loyaliſts. To paſſe therefore out of the old world, we will inſtance in the new, where among much affection and ſingular love and loyaltie to their Princes, it is yet ſtrange to heare of one diſſembling *Zimri* and politick *Jehu*, I meane *Atahuallpa*, who ambitiouſly oppoſed, and at laſt by his agents overthrew and ſlew his Soveraigne *Huaſcar*.

Dr. *Preſton*, New Covenant.

Commentarios Reales por Garcilaſſo de la Vega lib. 1. de ca. 2. parte. c. 33.

XLVII.

No worldly pleaſure hath any abſolute delight in it, but as a Bee, having honey in the mouth, hath a ſting in the taile. Why am I ſo fooliſh to reſt my heart upon any of them? and not rather labour to aſpire to that abſolute God, in whom is nothing ſavouring of griefe, nothing wanting to perfect happineſſe.

Dr. *Hall*, Meditat. and Vowes. 2 cent.

XLVIII.

XLVIII.

The godly man lives hardly, and like the Bee toiles here during the Summer of his yeare, holding himſelfe ſhort of his pleaſures, as looking to provide for a hard winter, which when it comes he is able to weare out comfortably; whereas a wicked man doth prodigally laſh out all his joyes in the time of his proſperitie, and (like the Graſhopper) ſinging merrily all Summer is ſtarved in winter. I will ſo enjoy the preſent that I will lay up more for hereafter.

XLIX.

Hugo Card. poſtil in Pro verb 25. 17. It is not good to eate much honey, becauſe it is flatuous and windy, ſo he which is a ſearcher of Majeſtie ſhall be oppreſt with glory; for as too much light dulls and dazels the ſight, ſo too great enquirie into the Majeſtie and ſecrets of God Rom. 12. 3. blinds the underſtanding; therefore ſaith *Paul*, *Let no man more highly thinke then he ought to thinke, but to thinke ſoberly, and ſeeke not ont the things that are too hard for thee, neither* Eccleſ. 3. 23. *ſearch the things that are above thy ſtrength.* And as honey is ſweet while it is taſted, but if it be taken too much, it ſwelles and kills, ſo the inquiſition of the divine Majeſtie, and of heavenly ſecrets is delightfull, but if it be too much it killes with er- 1 Cor 8. ror, or ſwells with pride. *Knowledge puffes up, but charitie edifies.*

L.

Bees are moleſted with many evills and enemies, ſome endanger them at or neare their hives, others aſſault and often ſurprize them in the fields, as the Hornet, Titmouſe, Spider, but many more miſcarry by froſts and ſnowes in winter, by cold ſtormes, chilling and tempeſtuous winds in the Spring, ſo that they are never ſecure (though they helpe themſelves in their troubles, by the Lee-ſide of a hedge, encompaſſing a hill, and eſpecially with the nimbleneſſe of their wings) but in their hive, nor alwayes there, except their keeper be more carefull.

How

How many are the miſeries of the ſonnes of men, *Ben Adam*, *Ben Enoſh*, if the ſonne of *Adam*, preſently the ſubject of ſorrow. A wicked man ſometimes in leſſer diſtreſſes may finde ſhelter in earthly comforts, but if the ſtorme grow black and raging, theſe will prove an Egyptian reed, which not only deceives but wounds us with the ſplinters; a deceitfull brooke then failes the thirſtie paſſenger, when there is moſt need of refreſhing; *Jobs* miſerable comforters And he will be beaten out of all helpe from them, and be as a naked man in a ſtorme, as an unarmed man in the feild, or as a ſhip toſſed on the Sea without an anchor, which preſently daſheth upon rocks, or falle h upon quickſands. But a beleever when he is driven out of all comforts below, nay when God ſeemes to be angry with him, can appeale from God angry to God appeaſed, he can wraſtle and ſtrive with God by Gods owne ſtrength, plead with God by his owne arguments. Finally, when he is beaten out of all comfort, he hath (a hive) a God to run to; and therefore can with *David* in his greateſt exigencies comfort and encourage himſelfe in the Lord his God. In this he takes Sanctuary, that he is is in covenant with him, who ſits at the ſterne and rules all, and hath committed the government of all things to his Sonne, our brother, our *Joſeph*, the ſecond perſon in heaven. We may be ſure no hurt ſhall befall us, that he can hinder, and what cannot he hinder that hath the keyes of hell and of death? unto whom we are ſo neare, that he carries our names in his breaſt, and on his ſhoulder, as the high Prieſts did thoſe of the twelve Tribes: though his Church ſeeme a widow neglected, yet he will make the world know that ſhe hath a husband will right her in his good time, for when men know us leaſt, God will know us moſt, he knowes our ſoules in adverſitie, and knowes them ſo as to ſupport and comfort them, and that from the Spring-head of comfort, whereby the ſweeteſt comforts are fetcht.

Dr. *Sibbs*, The ſoules conflict.

LI.

There is nothing more dangerous then honey mixt with poiſon; and there is no man more perilous then a flattering faire tongued man, that ſpeaketh out of a hollow heart.

T. Scot, Ser. on *Mat* 10. 17.

LII.

LII.

Dr. *James*, on 1 Cor 12. 25. As Bees of diverſe (ſuppoſed) noyſome flowers, make one ſweet honey; ſo nature the beſt Schoolmiſtres of many contraries hath made one the moſt ſweet and pleaſant mixture in the body, and that therefore leaſt there ſhould be any diviſion in the body.

LIII.

Mr. *Holbroke*, on Gen 4. 22. We muſt be diligent in our calling, not like the ſluggard, or the Drone in the hive, but like the labouring Bee, taking the time while time is, whilſt the Sunne ſhineth making hay: which condemneth ſuch, that though they will not be altogether without a calling, nay more then that will ſanctifie it by the word and prayer evening and morning, yet will be negligent in it, either too late at it, lying in their beds, turning them with the ſluggard (like the doore on the hinges) folding their hands, and crying yet a little more ſleepe, or elſe tatlers in their buſineſſe (omitting many dayes) with a ſhew of walking in their calling, but in truth nothing leſſe.

LIV.

Mr. *Milles*, on Deut. 1. 16, 17. There is in the regiment of Bees an intruſive and troubleſome Drone, which eateth up the ſweet honey, for which the poore painfull creatures have laboured long before. And in the curious Bee-hive of this Common-wealth, there are foure ſorts of idle Drones, much like the foure ſects of Philoſophers which ſometimes flouriſhed in *Athens*; The Academick, Epicure, Peripatetick, and the Stoick. The firſt, were greatly given to ſtudie and contemplation, and theſe are the idle gamſters who are all night in ſpeculation, deviſing new tricks, and inventing ſtrange conveyances by Cards and Dice, which next day they put in practice; God ſaith, *in the ſweate of thy face, thou ſhalt eate thy bread*, and theſe idle Drones live by the ſweat of other mens browes, only by playing. *David* with one ſmooth ſtone out of his bag diſcomfited the whole hoſt of the *Philiſtims*; and

Gen. 3. 19.

and this idle Gamſter with a blind bone out of his jugling box, with the activity of a polypragmaticall finger, can in one houre undoe many an hopefull heire. The ſecond Philoſopher is an Epicure, who daily gluts himſelfe till the ſurfetting reverſions of fat trenchers are caſt under the table to dogs. This was *Baltazars* ſin, who at his riotous banquet in exceſſe of wine among his Princes, wives and Concubines, forgat the Lord ſo farre: as Gods anger chalked his folly on the walls. In this fullneſſe ſinned churliſh *Nabal*, in forgetfulneſſe of poore *David*, and his tried followers. And in this fulneſſe periſhed the gluttonous belly-god in the Goſpel, who would rather choake with the cruſt, then hunger-bitten *Lazarus* ſhould have the crummes. Theſe were thoſe beaſts with whom the Apoſtle encountered at *Epheſus* after the manner of men. Their chiefe School-point was this; *Let us eate and drinke, for to morrow we ſhall die.* Againſt theſe gourmandizeing Epicures God grieveth and denounceth a woe; *Woe to them that eate the lambs of the flock, and calves out of the ſtall, drinke wine in bowles, and anoynt themſelves very coſtly, but no man ſaith he is ſorry for the affliction of Joſeph.*

The third is the Peripatetick, who uſed to diſpute walking and in this order are Cunnycatchers, who like the Devill are alwayes compaſſing the earth, and ſtill goeing up and downe ſeeking whom they may devoure. Theſe cunning Philoſophers walke from Inne to Inne, from Eaſt to Weſt, and with Satan can turne themſelves into an Angel of light, full of good words, and with *Judas* embrace a man with a courtly boone-congee, and at parting cut a mans throat, and empoveriſh many a plaine dealing Countrey gheſt, with coſenage in coparcnerſhip.

The fourth idle Drone or ſect of Philoſophers, is the Stoick, who uſed to keepe their acts and diſputations ſtanding, and theſe I call your Minicall Comedians and Apiſh Actors, who with *Thraſo* thunder out *ſeſquipedalia verba*, a heape of inkehorne termes, to the terror of a poore Collier, and with a ridiculous *tu quoque*, move many a foole to laugh at their owne follies.

LV.

Drones have larger bodies then Bees, ſeeme fairer creatures, fly oft in and out of the hives, with a great noiſe and humming ſound, but yet *nil dignum tanto ſonitu*, they labour not, gather nothing, are all in appearance, nothing in worke or worth. And many hypocrites by common gifts planted in their wills and affections, by excellent morall vertues of juſtice, temperance and patience, may many times exceed the godly in outward appearance; as dead bodies are greater and longer then living bodies, then the ſame bodies living, but yet want a ſoule to actuate and quicken them.

LVI.

Bees when they are new driven, or goe forth in a ſwarme, if they be not deſperately few, or the ſeaſon quite gone, labour more diligently and improve their time more carefully then other hives that are well provided for, and therefore will be more early and late at their worke then others; ſo by diligence redeeming the time. Thus doe theſe unreaſonable creatures teach reaſonable men, by their continued care and providence, and laborious paines-taking to encreaſe their little; for if the iron be blunt then he muſt put to the more ſtrength, ſaith the Preacher, and *Maximum mediocris ingenij ſubſidium diligentia*; It is moſt incredible what induſtry and diligence and exerciſe, and holy emulation are able to effect for the bettering and increaſing of our ſpirituall gifts. There is no uſury ſo lawfull as of ſpirituall talents, nor doe I know any ſo profitable uſury, or that multiplyeth ſo faſt as this doth, your uſe upon uſe that doubleth the principall (almoſt) in ſeaven yeares is nothing to it. Oh then caſt in thy talents into the banke, make thy returnes as ſpeedy, and as many as thou canſt, loſe not a Market or a Tyde if it be poſſible, be inſtant in ſeaſon and out of ſeaſon, omit no opportunitie to take in and put off all thou canſt, ſo though thy beginnings be but ſmall, thy latter end ſhall wonderfully increaſe, by this meanes thou ſhalt not only profit thy ſelfe in the increaſe of thy gifts unto thy ſelfe, but (which no o-

Eccleſ. 10 10 *Sen. in contr.*

Mr. *Sanderſon*, On 1 Cor. 12. 19.

ther

ther uſury doth beſide) thou ſhalt alſo profit others, by communicating of thy gifts unto them, which is the proper end for which they were beſtowed.

LVII.

If the Piſmire muſt be praiſed and imitated for her induſtry and diligence, in that ſhe carefully provides her food in Summer, and her meate in harveſt, when as yet neither man nor beaſt (as farre as I know) is any whit the better, the fuller, the richer for all her labours: How much more worthy of praiſe and imitation is the induſtrious Bee, which in diligence is more abundant, in paines taking more earneſt, in profit above meaſure? Let as many then as deſire true praiſe and imitation, caſt gifts into the common treaſury of the Church, employ their good parts and ſpirituall graces, ſo as they be ſome way or other profitable and ſerviceable to their brethren, and fellow-ſervants in Church and Common-wealth.

LVIII.

Delayes in any thing that is good are ill, and in the beſt things worſt. Waxe when it is chafed will take an impreſſion, but if the ſeale be not ſpeedily put to it, it returnes to it's former hardneſſe; and the beſt affections of the beſt men, if they be not taken in the heate, abate and leſſen and die.

LIX.

The Waſpes after their aged mother is unable to flie abroad (having her wings worne with former labours) provide for her, and bring her food as long as they themſelves ſubſiſt, really performing what is reported of the Storke: But how many worſe then brutes are to be found in this laſt age without naturall affection? if at all relieving their parents, yet after ſuch a niggardly and ſparing manner, that a man ſhall never come where their parents are, but heare them cry out like *Rebecca*, that they are weary of their lives, or like *Jonah*, it is better for them to die then to live. Nay the world ſwarmes with ſome

Ezek. 22. 7. men (or Monsters rather) such as *Ezekiel* speakes of and reproves, as set light by father and mother, such as, as soone condescend to relieve a vagrant by the high way side, as their owne father or mother.

LX.

Dr. *Hall*, Contempl. *lib* 10. *Sampson* had not found his honey, if he had not turned aside to see his Lion. And we shall lose the comforts of Gods benefits, if we doe not renue our perills by meditation. The mercies of God are ill bestowed upon us, if we cannot step aside to view the monuments of his deliverance; dangers may be at once past and forgotten.

LXI.

As the Bee-Master on occasion of want will feed his Bees, but never the Drones; so true charitie relieves those poore men that will labour, but not at all, or rarely those lasie beggars that will take no paines.

LXII.

As *Sampson* eat the honey-comb out of a dead beast, and disdained not those sweets because he finds them uncleanly laid; so good may not be refused because the meanes are accidentally evill; honey is honey still though in a dead Lion. Those are lesse wise and more scrupulous then *Sampson* which abhorre the graces of God, because they find them in ill vessels. One cares not for the Preachers true doctrine, because his life is evill. Another will not take a good receit from the hand of a Physitian, because he is given to unlawfull studies. A third will not receive deserved contribution from the hands of an Usurer. It is a weake neglect, not to take the honey because we hate the Lion; Gods children have right to their fathers blessings wheresoever they find them.

LXIII.

Jonathan out of the honey drew the danger of death, and we

we draw evill out of good, and turne the grace of God into wantonneſſe; our wealth and honours make us proud; our favours with great men to diſdaine our betters; and our powers to oppreſſe the innocent; from the length of dayes we draw forth a multitude of ſinnes; from beautie luſt, and from the abundance of Gods mercie, preſumptuous perſeverance in ſinne; but as the Bee ſuckes honey out of the Henbane, and *Sampſon* out of the eater drew meate, and out of the ſtrong drew ſweetneſſe; ſo God which commanded the light to ſhine out of darkneſſe, did from the death of Chriſt bring eternall life, to as many as beleeve in him, for he gave his Sonne that whoſoever beleeveth in him ſhould not periſh but have everlaſting life.

Dr. *Willams*, The beſt religion, *Pſ.* 2.

LXIV.

Bees are the moſt harmleſſe and laborious, the moſt orderly and profitable creatures that the world affords; and yet have more adverſaries and enemies then (almoſt) any other creature, as in the enumeration of them in the former booke hath been diſcovered: and herein are they Emblemes of beleevers, who though they hurt none, profit all; yet are oppoſed and perſecuted by many. Satan (firſt) like a roaring Lion ſeeking whom he may devoure, and his Emiſſaries are ſtill compaſſing ſea and land, endeavouring their deſtruction. If *Iſrael* will needs goe out of *Egypt* to ſerve his God, *Pharaoh* will be preſently up in armes and purſue after him. This Serpent hath a brood of his owne bowells, that like the Mole can creepe under the earth, and tranſforme themſelves into Angels of light, to performe deeds of darkneſſe; which made *Eſaiah* cry out *he was undone*; *David*, *woe is me*; and why? for they dwelt among a people of polluted lives, and that abhorred peace, their throates were an open ſepulcher, their tongues like razors hot as the coales of Juniper, the poyſon of aſpes under their lippes, and their mouth full of curſing and bitternesſe. And beſide theſe forraigne foes that ſeeme the further from us, there be homebred and domeſticall, and therefore more dangerous adverſaries; Firſt, corruption the old man, that daily ſends forth whole ſwarmes of luſts to deſtroy the new. And ſecondly, death the laſt enemie that is to be deſtroyed.

LXV.

LXV.

It is a common but fabulous conceit, that Bees once loſing their ſtings, loſe their naturall diligence and induſtrie and become idle and laſie Drones. But it is really true of too many men, who ſometimes with their faces to *Sion*-ward make profeſſion of holineſſe and religion, but feare of the loſſe of fame, eſtate, honour, or life, makes them with *Demas* and *Hymenem* embrace the world, and make ſhipwracke of faith and a good conſcience.

LXVI.

Bees are acknowledged to be a Common-wealth, and manifeſt it, as in many particulars, ſo in theſe that they watch and worke, provide and labour, procreate and educate one for another; once, doe all for the benefit and advantage of the whole body. I would our Common-wealth were comparable to a hive of Bees even in theſe things, then we would be content to watch and labour one for another; all, for the ſafety of the whole body. In a Ship no mans ſafety is in ſingle care for himſelfe, but in the common good of the company, ſo ought it to be in the Common-wealth alſo. Therefore no politick body can proſper or make a good Voyage where private reſpects make prize and Monopolies of publique projects, where the little finger will weare a Diamond, though the ſtomack which feedeth all, wanteth meate to ſuſtaine the whole body. This St. *Paul* ſo earneſtly diſſwadeth, that he calleth the mutuall love of Chriſtians, *the band of love*, tying us together.

Dr. *Page*, *Zebulons* bleſſing.

LXVII.

The robbing Bee and the Waſpe, (though there be between them, if not an antipathie, yet certainly a deſperate hatred and enmitie) will without ſtrife or difference concurre together together to rob a hive of Bees, deſerving ill of neither, but only through paucitie and weakneſſe obnoxious to their inſolence and rapine. Doe you wonder then if men wickedly diſpoſed (though

(though ill affected each to other) to compasse their particular designes, with formalities of concord, comply and agree together, as *Herod* and *Pilate* were made friends to crucifie Christ, to compasse the destruction of another, by whose ruine they may greaten and enrich themselves.

LXVIII.

Bees in extremitie of winter lie still in a deepe (but not dead) sleepe, stirre not from their places, eate not, make no noise, but on the alteration of the weather, when the Sunne shineth chearely on them, then these sleepers awake and revive. Many men finding some change in themselves, because such lusts as have been formerly vigorous and lively are now dull and torpid, they thereupon comfort themselves, as if they were dead, whereas they are but covered and laid asleepe for a time, and will awake and rise againe. As *Sampson* when he was tyed with cords rose againe, and was as strong as ever he was when the opportunitie came, and it was told him *the Philistines are upon thee Sampson*. So lusts are oft laid asleepe till the opportunitie comes, when all the threds of good purposes breake, and they rise againe in their strength, therefore if there be not a new creature brought within thy soule, thy lusts are but asleepe, they will rise againe.

Dr. *Preston*, The New Creature.

LXIX.

'Tis not the waxe but the impression of the seale that fortifies a Conveyance, and makes the Deed. And temptation however in it selfe, it be lesse then the fact, yet considered in the Author that invites sin by these opportunities doth farre outgoe it. The infirmitie of a sinner may sometimes find excuse or pitie, but what shadow of excuse can shelter his malice, that drew him to the act? Man is a thing easily perswaded to error, *Cereus in vitium flecti*, like waxe wrought to a softnesse that will receive the figure of any vice. And yet we blame not his softnesse, but lament him whose credulity and easie temper betrayes him to every temptation. If we lay the occasion of mans fault aright, we must lay it on the tempter. At his allurements did *Adams* obedience relent, his perswasions heated him with

Dr. *H. King*, Exp. of the L. Prayer.

Juvenal

with the inordinate desire of knowledge; he chast this waxe, mollifying it with such art that it received his authenticall seale of damnation, by which sinne was made currant in the world.

LXX.

A man findes God in his word as he seekes him by prayer, and no otherwise; wax receives impression as it is prepared.

LXXI.

If Bees be once provoked they are fiery and furious, violent and virulent, though to their owne ruine and destruction, implacable and unappeasable with opposition and resistance. And such is the impatient man, he hath his spirit set on fire of hell, he hath a short possession, he is a mad man for so many yeares, that will not stick at any thing that the Devill and depraved nature bids him doe; he will flie in the face of servants, children, wife, Magistrate, God, any one; his heart brings forth sin by troopes.

Mr. Lokier, Usefull instruct.

LXXII.

Bees will not admit of strangers into their society, except they come with submission and resolution to live under their Leader, and assimilate themselves to their manners, without any after-commerce or fellowship with the hives from whence they departed. And God receives none under the tuition of his love and favour, but such as are wholly emancipated from the world, and with full purpose of heart give up themselves to be guided by him, without having any further fellowship with their former workes and companions of darknesse: heaven is bestowed upon none but upon such who are thus both willing and capable, holinesse makes capacitie of happinesse.

LXXIII.

Bees are contented with a simple food procured by their owne industrie, of which they feed sparingly, but worke labo-

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riously and diligently: Whereas the Drones work not at all, but liberally fill themselves, and that daily with the purest honey, and to sharpen their stomacks take many a vagary in the heate of the day, with a loude buzzing, as if they were acting somewhat to purpose, but it is only to emptie their bodies, and quicken their appetite, whereby they often grow unweildy, and after a while (though the Bees let them alone) cannot returne back againe into the hive. And are not many reasonable men defective in their imitation of the unreasonable Bees? who frequently eate to surfeting and drink to drunkennesse, and exceede the limits of temperance in the use of the creatures, denying themselves no pleasing nor desireable thing, that so they might prevent such evills, as admitting these exorbitancies will bring inevitable mischiefe upon them: But Drone-like live idly and intemperately, not considering the Apostles exhortation; *Be sober, be vigilant*, saith he, *for your adversary the Devill, as a roaring Lion, goeth about seeking whom he may devoure*. As if he should have said, you are all in a warfaring condition in the field with an adversary, and he not simple one, but a Lion, a roaring Lion; a diligent adversary, who is alwayes going about seeking whom he may devoure, drawing into sin, for he hath no way to devoure men by, but that: therefore doe you as Souldiers in the field with an enemie would doe, they plie not their bellies, but use their meate and drinke and sleepe very sparingly, because though this be not enough to prevent the mischiefe that is intended them by their enemies, yet it is one very good meanes of their safety, for it preventeth a sudden surprizal, and enableth them to make resistance, and so would a moderate use of meate, drinke, pleasure, *&c.* keepe you waking and give you libertie to prepare for all encounters with the Devill.

Ephes. 5. 5.

Mr. *Hoard*, Soules misery.

LXXIV.

As the humming Bee having lost her sting in another, doth still notwithstanding make a fearfull and grievous noise by her often buzzing about us, but is nothing able to hurt us: so sin and death having lost their sting in Christ Jesus, doe not cease at all, even in the height of the parching heate of our consci-

Mr. *R. Greenham*, Comfort for afflict. consci.

ences to make a murmuring and with furious ſtormes of temptations to terrifie us and our conſciences, albeit they can never ſting us.

LXXV.

A man by diſcourſe can never poſſibly perſwade another of the ſweetneſſe of honey ſo fully as if himſelfe did taſt it. And it cannot be told how ſweet a thing grace is, doe but try, and you ſhall ſoone perceive a difference between it and all outward comforts, therefore *come and taſt*, ſaith the Prophet, *how good the Lord is.*

Mr. *Harris*, Way to true happineſſe.

LXXVI.

Bees though (many times) they have ſufficiently ſtored and repleniſhed their hives, yea ſometimes to a ſuperabundant redundancy; hindering for want of emptie cels the future generation, and ſo ſuffer becauſe of their plenty; yet will they not give over working; nay ſome, not leave robbing and that from the weaker and wanting hives. Have we not here a faire picture of a covetous man, who is never at reſt, never ſatisfied and contented.

LXXVII.

The Bee a nice and dainty creature, builds her cells ſometimes in an unſavoury carkaſſe, and the carkaſſe that promiſeth nothing but ſtench and annoyance, now offers comfort and refreſhing, and in a ſort payes *Sampſon* for the wrong offered. Oh the wonderfull goodneſſe of our God, that can change terrors into pleaſures, and can make the greateſt evills beneficiall. Is any man under his humiliation, under the hand of God growne more faithfull and conſcionable? there is honey out of the Lion. Is any man by his temptation or fall become more circumſpect? there is honey alſo out of the Lion: There is no *Sampſon* to whom every Lion doth not yeeld honey: Every Chriſtian is the better for his evills, yea Satan himſelfe in his exerciſing of Gods children advantageth them.

Dr. *Hall*, Contemplat. *lib.* 10.

LXXVIII.

LXXVIII.

If robbing Bees charge a neighbour-hive, and finde a reſolute oppoſition, with the ſlaughter and deſtruction of the prime Leaders and forward invaders, the ſcattered reſidue and broken triarij will be timerous and fearefull to reattempt, or if at all but faintly, and quickly ſound a finall retreate. And he that hath felt the ſting of ſin in his conſcience, and been formerly confounded with the ſhame thereof, dreadeth and fleeth and ſeeketh by all meanes to ſhunne thoſe ſinnes which have left ſo ſad a remembrance behind them for the ſmart of the wound of conſcience for ſinne paſt, is a ſpeciall meanes, through grace, to keepe us from ſinne to come; for (as *Lactantius* writeth) the aſhes of a burnt Viper are a preſent remedy againſt the ſting of the Viper, ſo the remaines of ſinne in the conſcience, *viz.* remorſe and ſhame are a preſent remedy againſt ſinne, as we may ſee in *David*, *I know mine owne iniquitie, and my ſinne is ever before me.*

Dr. *Featly*, The Check of Conſcience.

Lactan.

Pſal. 51. 3.

LXXIX.

Bees are very little creatures, and their ſting is very ſmall, not viſible except it be very neare and yet this ſting affects with grievous ſmarting paine. And if the ſting of a Bee ſwell and rankle, and ſmart ſo much, what will the teeth of the Adder, or the taile of the Scorpion? if thoſe little ſinnes that are ſo ſmall that we can ſcarce diſcerne them to be ſinnes, put the conſcience to ſo much paine and anguiſh, what will great ſinnes doe? *If whoſoever is angry with his brother without a cauſe, ſhall be in danger of the Judgement; and whoſoever ſhall ſay unto his brother, Racha, ſhall be in danger of the Counſel; And whoſoever ſhall ſay, thou foole, ſhall be in danger of hell-fire:* What puniſhment is he like to endure, who beareth malice in his heart againſt his brother, envieth his proſperitie, undermineth his eſtate, woundeth his good name, nay ſpilleth his blood, this is a crimſon ſinne, and mortall in a double ſenſe; not only becauſe it ſlayeth the ſoule, but alſo becauſe it killeth the body.

LXXX.

Plutarch de anima tranquil.

Plutarch writeth that though Time be a most drie and bitter herbe, yet that not only the Apothecaries draw an wholsome oyle out of it, but also that the Bees extract from thence sweet honey. This drie and bitter herbe is affliction to the taste of most men: yet out of it men may draw both a wholesome oyle to cure a wounded conscience, and honey also to delight the spirituall taste. Oyle out of the nature of afflictions which are chastenings; and honey out of the cause Gods love: *As many as I love I rebuke and chasten.*

Revel. 3. 19.

LXXXI.

Dr. *Preston*, New Covenant.

If you doe but take any peice of Gods word, and doe but stay upon it, as the Bee doth on the flower, and will not off till you have got somewhat out of it; if you be still digging in this mine, this will make you rich in knowledge, and if you be rich in knowledge, it will make you rich in grace.

LXXXII.

Mr. *Gataker*, on *Psal* 82. 6.

The word of God, saith the Prophet, *is good*, yea and pleasant too, to every one that walketh uprightly, as sweet as honey, yea sweeter then the purest honey to such; as *David* professeth of himselfe. But even honey it selfe, though of it selfe good and pleasant, and wholsome and medicinall, yet causeth paine and smart to an exulcerate part. And children therefore that at other times much desire and cry for it, yet will not endure to have it come neare their lippes, when they have sore mouths. It is mans love of his owne corruption and impatience of cure, that maketh the word of God harsh and unpleasant unto any.

LXXXIII.

S. Garey, on *Esa.* 7. 5.

Looke upon the silly Bees the best Emblemes of obedient creatures, painfull in their labour, dutifull in their life, their king being safe, they are at unity: So long as their king is well, they

they follow their worke, but being dead, they leave and loath their honey-combes. Behold how nature hath ſtamped obedience by inſtinct to Bees to be ſubject to a ſuperior in their kind; how much more ſhould nature, reaſon, and grace, ſtamp obedience in the hearts of Chriſtians, knowing that without a government, Kingdomes and States are thraldomes, *Remota juſtitia quid ſunt regna niſi magna latrocinia*, take away juſtice, and what are kingdomes but dens of theeves, take away obedience to government, and that were *miſcere terris tartara*, make earth and hell all one, but only in name. *Auguſt. de civitat. dei. lib. 4. c. 6.*

LXXXIV.

Bees will not be forced to communion with others, except they voluntarily forſake their owne hives in a ſwarme; for take them at other times, as when they lie out and ſweepe them into another hive, yet they will (at furtheſt) the day following all returne back to their owne and proper hive: it is with them as with a ſtreame that hath made it ſelfe a channell wherein to run, it may indeed by a ſtrong hand be turned out of it's courſe, but yet it will be ſtill bending towards it's owne way, and never leave working and winding till it be where it was before: ſo howſoever the upright perſon may be unſetled for a time and put beſides his courſe, yet he ſtrives and labours to be where he ſhould be, and never finds himſelfe well, till he be in his firſt path: like the Needle in the Compaſſe, though it be jog'd aſide for a ſeaſon, yet it makes toward the North againe, and is in a perpetuall trepidation, till it be where it ſhould: So the children of God, though they be ſubject to manifold declenſions, manifold deſertions, manifold ſtops and ſtayes in their courſe to heaven, yet ſtill ſet their faces thitherward, though the wind may ſometimes violently carry them beſides the way, yet it doth not diſmay them, nor doe they find any reſt or content in their ſoules, till they be in their right courſe againe. Mr. *Harris.*

LXXXV.

Bees of all politick creatures moſt unanimouſly comply and combine together, live and love together, mutually protect

and

and provide for one another, alwayes agree among themſelves, and act and worke all for the publique good and wellfare of the whole body: they (as it were) throw downe all encloſures, lay all in common, not ſelfiſh, looke not on their owne things, but on the things of others, tendering their well-doing as their owne; neither are they apt to give offence careleſſely, nor to take it cauſeleſſly. And ſhall men, ſhall Chriſtians be ſo unnaturall as to enveigh one againſt another, to entrap one another, to defame, diſgrace, and devoure one another, *tantæne animis cœleſtibus iræ?* as he ſaid in another cauſe, this is all one as for one eye to pull out another, one hand to cut off another; know we not that perfection and ſafety depends in union? as on the other ſide, danger and deſtruction inevitably followes on diſtraction. Union like the wiſe woman *Solomon* ſpeakes, buildeth up the houſe, but diviſion as the fooliſh woman pulleth it downe with her hands.

LXXXVI.

The Waſpe loveth not the Apothecaries Gally-pot, but the ſweets contained therein: If we love any for our pleaſure, we love indeed our pleaſure and not him, if we love him for our profit, we love our profit and not him, if we love him for any end of our owne, we love our ſelves not him: Thus the *Jewes* loved not Chriſt, but the loaves which he multiplyed by miracle.

LXXXVII.

Some Naturaliſts obſerve, that the thickeſt and beſt honey is that which is ſqueezed laſt out of the combe, ſo uſually the daintieſt diſh is ſerved in at the laſt courſe; and Muſitians reſerve the ſweeteſt ſtraine for their cloſe; the laſt ſpeech of a dying friend leaves a deepe impreſſion in our hearts; and art imitating nature holds out the laſt note of the dying ſound in the Organ or voice.

LXXXVIII.

The *Iſraelites* comming into a wood, where they ſaw the honey

ney dropping, and found the meate as ready as their appetite, yet dare not touch the ſuſtenance, and will rather endure famine and fainting, then an indiſcreet curſe: So the truly righteous, though great temporall advantages preſent themſelves with the breach of Gods Law, yet rather chooſe a contented poverty then riches with the appurtenances of everlaſting ſorrow. Dr. *Hall*, Co templat. *lib.* 11.

LXXXIX.

As *Sampſon* tooke honey out of the carkaſſe of the Lion; ſo it becomes the Magiſtrates to pull the honey of the Church out of the jawes of all ſacrilegious Lions. But if the cunning conveyances of ſacrileage have made that impoſſible, ſince it lies not now intire in the combes, but is let downe and digeſted by theſe ravenours. Let him whoſe glory it is not to be *pater patria*, but *pater eccleſia*, provide that thoſe few pots we have may ſtill ſeeth, and that if nothing will be added, nothing can be recovered, yet that nothing may be purloyned from the Altars of God. *Idem.* The Impreſe of God.

XC.

Thy lippes, my Spouſe, drop as the honey-combe; honey and milke are under thy tongue. He commends the Spouſe for her lippes and her tongue: Now her lippes are the Preachers and Doctors, and other Teachers of the Church, who ought to be a honey-combe to their people with the ſweetneſſe of love, and diſtilling with gentleneſſe and affability. The lippes of *Moſes* were not an honey combe, becauſe they had more bitterneſſe then ſweetneſſe, *I am not eloquent*. Alſo the Law of *Moſes* had bitterneſſe, for it required *eye for eye, tooth for tooth*. Againe, though the lippes of *Moſes* were a honey-combe, yet not dropping, but dry and ſtony and myſterious, that is, in ſtony Tables, where in truth the ſecret of the divine Law was hidden, ſo that he made him to ſuck honey out of the Rock. But now the lippes of the Church drop as a honey-combe: A honey-combe is honey in the waxe, that is, the divinitie in the humanitie. Or by honey-combe is underſtood the ſecret of divine wiſdome, which *Hugo Card. Poſtil. in Cant.* c. 4. 11. Exod. 4. 10. Exod. 21. 24. Deut 32. 13.

which is melted from the lippes of the Church, whence it follo-
lowes, *Honey and milke are under thy tongue*; by tongue is to
be underſtood the ſame with the lippes; by honey is ſignified
the inſtruction of the perfect, but by milke the teaching of the
ſimple. The Apoſtle had honey under his tongue when he ſaid,
1 Cor. 3.2,3. *As unto Babes in Chriſt I have fed you with milke.* A honey-
combe dropping, not dilated and ſpread abroad: For the words
of Doctors or Preachers ought to drop according to the capa-
citie of the hearer, not to be powred out all at once.

XCI.

Bees are not only profitable for our bodies, but morall uſes
are by Divines made of them. The Queene-Bee only uſeth not
Polani Syntag. lib. 5. c. 25. her ſting, hath a body greater then the reſt, wings not anſwera-
ble to her body, workes not, yet though throned in the top of
the hive, makes a continued progreſſe or walke over it, after a
ſort over-ſeeing, directing, exhorting others in their ſeverall
J. Ja. Grynæ. 1a. Theorem. et problemat. theolog. ſtations and employments. So kings and great men ought to
have innocent hands readily extended for the good of all, va-
liantly defending, willfully hurting none, with counſell and au-
thoritie preſiding and profiting, whenſoever there is need and
occaſion.

XCII.

The Bee, ſaith the ſonne of *Syrach*, is little among winged
creatures, ſhe compoſeth her workes admirably, and obſerves a
wonderfull politie and order in government: So ſome men that
have little bodies, and leſſe ſtrength, yet have acute wittes and
working braines.

XCIII.

Bees gather of many flowers, but hurt none: ſo ought the
Governours among Gods people, have a care of all their ſub-
jects, but wrong and prejudice none.

XCIV.

Bees ordinarily delight not in dead carkaſſes, nor gather of
dead

dead flowers: ſo ought heroicall natures to abominate vices and vicious perſons.

XCV.

Bees gather not all things of every thing; but Bee-bread of ſome flowers, honey of others, water elſe-where: ſo ought the Governours of kingdomes to exact and expect ſome ſervices from Divines, others from Lawyers, others from the Nobilitie, others from Citizens, and others from men of inferiour ranke and qualitie. Now it is a ſingular part of judgement and prudence to obſerve what beſeemes each order, what every man can performe, and to draw all orders to a pleaſing harmonie.

XCVI.

Bees are diligent in their labours whenſoever faire weather invites them, and not only on ſome ſet times or dayes, taking libertie to be idle on others. So ought the Governours of kingdomes alwayes attend and procure the good of the Commonwealth, and of each particular perſon in the ſame, but without hypocriſie and diſſimulation. *Friderick* the third Emperour of *Germanie* not without cauſe when he ſaw his Counſellers enter into the Court at *Vienna*, was wont to wiſh, that every man of them before they entered in, would put off two plagues of the Common-wealth, *ſimulation* and *diſſimulation*.

XCVII.

Bees, as ſome other Inſects, will flie ſo long about a Candle till they burne their wings, and loſe their lives. And a wandring mind growing wanton with curious care about the flame of hidden ſecrets, oft befooles, nay deſtroyes it ſelfe.

XCVIII.

A wiſe ſoule in his thought-worke is as a Bee-hive, all the powers are in labour, and continually going out and returning, no power idle, and none returne emptie, and all their obſerva- Mr *Smithes* Chriſtian Obſervations.

tions as honey laid up for uſe: it gathereth and digeſteth in it ſelfe a ſubſtance and maſſe of purified knowledge, and that for affection and action, and all of them for the obedience of God and union with him.

XCIX.

Bees are not only laborious when they are in want, and their proviſion ſmall, but when they are largely ſupplyed, they are as earneſtly bent on their gathering as if they had nothing. Beleevers are not to ſtint their endeavours, when they have attained to a competency of knowledge, but to goe on ſtill forward and grow, for though they have enough to make them thankfull, yet never enough to make them remiſſe and negligent, they muſt ſtill preſſe forwards, like runners in a race, and look not how much they have runne, but how much remaines: let it alwayes diſpleaſe thee to continue as thou art, if thou meaneſt to arrive where thou art not.

C.

Bees have a common houſe, a common care of poſteritie, common labour, common food, common generation, a common uſe and fruition of all things, and therefore intirely and cordially love one another, if one be wronged they will all, though with the loſſe of their owne lives, vindicate the injury and vanquiſh the adverſary. And ſhall not profeſſors of the ſame religion who are in ſo neare a relation one to another, be tenderly affected one to another, and love one another? They have the ſame God for their father, the ſame Church for their mother, Chriſt their elder brother, are begotten of the ſame immortall ſeed, nouriſhed with the ſame milke of the word, eate the ſame bread of the Sacraments, and looke for the ſame bleſſed inheritance, and therefore muſt needs, by the teaching and worke of the Spirit, love one another heartily and mutually.

Mr *Elton*, Expoſ. on *Coloſſ.* c. 4. v. 15.

THE

THE THIRD CENTURIE.

I.

THere is something of God in every creature, this makes the meditation of the creature to be usefull. There is none, even the meanest (much more the Bee) but it hath a being, and thereby in a sort sets out the goodnesse of God: God likens himselfe to many, to shew that there is something of him in these, and therefore to teach us to rise from them to him in whom all the excellencies that are scattered in them are united. In innocency we knew God, and in him we had knowledge of the creature, but now we are fayne to helpe our selves from the knowledge of the creature, to rise to the knowledge of God. Dr. *Sibbs*, Bowells opened. *Ser.* 16.

II.

Our eyes should like a Bee upon infinite variety of flowers, from every creature it lookes upon collect much sweet matter of heavenly meditation, for the magnifying of the Creator, his wisdome, power, *&c.* Mr. *Bolton*, Saints soule exalt. humila.

III.

Bees provoked neare the hive, will be very troublesome, and according to their power dangerous; striveing, striking, or contending further exasperates, but yeilding or giving place pacifies them. And if we aime at peace with men in case of controversie with another, let us apply our selves to a coole language, speake softly, speake wisely, speake silently and in secret: this will coole the great heate of another, and disarme him of his

exceſſive indignation; hard to hard will never yeild, but lay hard to ſoft, and you may breake even a flint upon a bed or cuſhion which cannot be done by laying one flint upon another: So let a mans heart be never ſo hard and obdurate if we uſe ſoft words to him, give him mild ſpeeches, he cannot but be mollified and melted towards us; In ſo doing you ſhall heape coales of fire on his head, which ſhall melt and ſoften him.

IV.

Bees though they be engaged in a hot and mortall skirmiſh with other Inſects, yet ordinarily uſe not their ſtings, but wreck their ſpight with biting and breaking of their enemies legges, but when they are tranſported with rage, and blinded with paſſion, then they ſting, but alwayes with their owne certaine ruine and deſtruction: And not leſſe prejudiciall is the fire or paſſion of zeale to profeſſours and the Church of God, where it wants knowledge to direct it. What *Iſocrates* ſpake ſometimes of valour or ſtrength, is as true of zeale, *viz.* that zeale and reſolution with wiſdome doth much good, but without it, it doth much miſchiefe to our ſelves and others, like Granadoes and other fire-workes, which if they be not well looked to and ordered, they break and doe more hurt to them that caſt them, then to the enemie. No man can be ignorant of the direfull effects of blind zeale, when an unskilfull Phaeton takes upon him to drive the chariot of the Sunne, he ſets the whole world in a combuſtion. What a metled horſe is without a bridle, or a hot ſpurred rider without an eye, or a ſhippe in a high wind and ſwelling ſaile without a rudder, that is zeale without knowledge, which is like the eye in the Rider to chooſe the way, or like the bridle in the hand to moderate the pace, or like the Rudder in the ſhippe to ſteere ſafely the courſe thereof. St *Bernard* hits full on this poynt, Diſcretion without zeale is ſlow-paced, and zeale without diſcretion is heady, let therefore zeale ſpurre on diſcretion, and diſcretion reine in zeale.

Nevar. ad Dan.

Dr. Pott's, The true Zealot.

Bernard in Cant. Ser. 22.

V.

Bees of the ſame hive live together with the greateſt love and agree-

agreement that can be conceived, never contending, never quarrelling: whereas sheepe of the same fold when they are wanton will dash one against another, and almost breake one anothers heads; yea men that live in the same house, of the same familie, will jarre and jangle; yea children that tumbled in the same bellie, for very trifles sometimes will fall out and fight one with another. May true Christians (with shame and griefe be it published) though they will not persecute the cause of religion, yet will molest and disquiet their fellowes, through passion, pride, selfe-love, and other corruptions drawing them thereunto.

VI.

Waxe must be chafed and tempered between your fingers if you meane to set an impression upon it, and if you continue not to temper it, it will be hard againe nevertheless. And so it is with our hearts, therefore use the meanes of grace constantly, doe it day by day, estrange not your selves from God by intermission of holy duties. Mr. *Hamie*, Treatise of the new Covenant.

VII.

Hardnesse is not intrinsecall to wax, but there is a naturall tendency to softnesse: Let it be hardened through cold, yet bring it to the fire, or let the Sunne smile a while upon it, with it's beames and warmth, and it will relent, and if the heate be strong returne to it's liquid nature. But now it is farre otherwise with a stone, for let the Sunne shine never so hot upon it, lay it by the fire it melts not, it yeilds not, nay it is rather made the harder. The wicked man hath the hardnesse of a stone, let him enjoy never so many mercies, he is not a whit moved the more to amend his life, let God speake to him, let him smile upon him, all's one to him; nay he growes every day under the best meanes more hard and impenitent. Contrarily, the faithfull Christian, how ever by sinne he may for a time contract hardnesse, yet bring him to the Word and Ordinances a while, let God shine upon him with the light of his countenance, and he will resolve presently and recover his former tendernesse.

VIII.

VIII.

Bees are frequently endangered by Spiders who weave their cobwebbs neare the flowers where they use to gather, and also just over their passage out of their hives, and so at their going forth, but especially at their returne home laden and weary, make a prey of them. And earthly things prove snares to many, because of their dayly presence. *In the way wherein I walked, have they privily laid a snare for me*, saith the Psalm ſt, and in the way and places wherein we are dayly walking and travelling doe these baites lie, they are the things which we continually look upon, heare of, handle, tast, feele, and therefore as those snares which are laid for a bird in the place where it is frequently hopping up and downe, doe much endanger it, so those necessary evills which therefore we live among, and make continuall use of, because they are necessary, doe the more strongly allure us unto danger, because they are alwayes before us.

Psal. 141. Mr. *Heard*, Soules misery.

IX.

Whensoever any people did forget to leane upon Gods Word, and betooke themselves to humane confederacies, to correspondence with idolatrous people, to facilitie in superstitious compliances, and the like fleshly counsells, they find them alwayes to be but very lies, like Waxen feasts made specious of purpose to delude ignorant commers, things of so thinne and unsolide a consistence, as ever were broken with the waight of those that did leane upon them.

Mr. *E. Reynolds* explicat. of the 110 *Psalm.*

X.

Lusts ever bring inconstancy with them, and make the soule like weary and distempered bodies, never well in any posture or condition; wicked men flie like Bees from one flower to another, from one vanitie to another, and can never find enough to satiate the endlesse intemperancy of unnaturall desires, only the Gospel being spiritually apprehended, hath treasures enough for the soule to rest on, and to seeke no further.

Idem.

XI.

XI.

A Bee when ſhe hath once ſtung can ſting no more, yet will teſtifie an angry diſpoſition by loude buzzings and frequent ſtrikings at the face of the partie (ſtung before) ſometimes to his trouble and perhaps to his feare, alſo being already ſenſible of his preſent ſmart, and ſuſpecting further danger. So many froward men when they have to their utmoſt injuried others, and intended more; but when their cauſes are tryed and prove deſperate in right, they will yet ſtill create perverſe matters to moleſt their neighbours, and the more they ſinke in the maine of their intendment, the more impetuouſly will they ſeeke to perplex and trouble them.

XII.

All relations and conditions have a mixture of ſome Wormwood or Gall with them, they are not all honey; but like Bees they have a ſting of griefe and trouble. A man may have bitterneſſe with his ſweeteſt comforts; ſo had *Abraham* with his good wife *Sarah*, ſhe was twice taken from him. Mr. *Reyner*, Precepts for Chriſtian practiſe.

XIII.

There is a magneticall attractive force in the Queen-Bee, ſo that what the Loadſtone is to the iron, is ſhe to the reſt of the Bees, and therefore whereſoever ſhe is will they be alſo. And no leſſe attractive and powerfull is Chriſts love in us, our hearts are heavy and downwards of themſelves, but his love drawes us upwards and makes us heavenly-minded, it makes us deſire further and further commu ion wi h him, ſtill there is a magneticall attractive force in Chriſts love whereſoever it is, it drawes the heart and affections after it. Dr. *Sibbs*, Bowells opened.

XIV.

Waſpes and Hornets feed on fl ſh, carrion, dead Bees, flies, almoſt any thing; but the Bee is a neate and curious feeder, ſhe

ſhe ſucks and extracts the quinteſſence of flowers, which ſhe chimically diſtills in the Limbeck of her belly; and thus prepared layes it up for future food. So the Chriſtian ſoule in this reſpect is a Bee that will not feede on worldly carrion or ſinfull pleaſure, but on Chriſt and ſpirituall things. The ſoule of a carnall and naturall man uſeth to feede upon duſt, carrion, earth, and earthly things, when the ſoule of a true Chriſtian that hath the taſt of grace, feedes neatly, it will not feede on that which is baſe and earthy, but upon heaven and ſpirituall things. The perpetuall everlaſting intercourſe between Chriſt and a Chriſtian, is his maine happineſſe here, and his eternall happineſſe in heaven.

XV.

Mr. *Heard*, Scules miſery.

Temptations to ſinne come about us like Bees (buzzing into our mindes evill thoughts, and preparing to ſting by drawing us into conſent) but it is in the name and by the power of the Lord that we doe deſtroy them; and therefore the Apoſtle

Rom 16. 20. ſaith expreſſely; *The God of peace ſhall tread downe Satan under your feete.* If he be trodden downe, it is God that doth it for us.

XVI.

Whoſoever dallies or playes with the Bees at the hiver mouth, doth it with his owne perill, for although at firſt he be perhaps neglected or aſſaulted but with one or two, yet if he perſiſts in his folly or fool-hardineſſe, he ſhall quickly find more fiſts about his eares then his owne, and not eſcape ſcot-free. Would we not be overcome and foyled by temptations, conjure them not up, dally not with them, but if they be riſen, quickly lay them, ſtifle them in their birth, and they will expoſe us to no further trouble or danger; Though flax (ſaith one) be never ſo catching, a ſparke of fire may fall in, and yet not enflame if it be eſpied and taken out ſuddenly ere it have time to inſinuate its force into the combuſtible matter, and ſo evill motions if quenched at the firſt kindling, ſeldome breake out into a flame of rebellion. But if we neglect them, bid them welcome,

welcome, or parlie with them, or pleaſe our ſelves in them (though with no intent to commit ſinne) luſt will *incaleſcere* wax hot and conceive, and then the next thing we are like to heare of, will be the birth of ſome foule ſinne or other.

XVII.

There is a kinde of life in the Worme (the firſt but imperfect birth of a Bee) but yet neither ſeeing nor heareing, nor locomotive faculty, though it ſtirres in it's cell and receives the food that is brought to it, yet can it doe nothing for it's benefit or defence, or others pleaſure or profit. And as life is thus ſhut up in this imperfect creature, till by a further birth and tranſmutation it receives a new and better life; ſo is the light in a naturall man ſhut up before regeneration, all the light they have doth but glowe in their breaſt, ſhewing it ſelfe there (as a late reverend Divine) and making it evident that they have ſuch knowledge, but it is not a candle that enlightens all the roome, that enlightens all the corners of the ſoule. Take the light of a Starre in a darke night, and compare it with the light of the Sunne, though never ſo little: Looke in what meaſure it appeares, it ſcatters the darkneſſe from Eaſt to Weſt: So there is a light in the mindes of carnall men, which is but as a Starre in a darke night, which doth not take away the darkneſſe, but in the regenerate it is a ſanctified light, like the light of the Sun, not ſhut within a narrow compaſſe, but ſpreading it ſelfe unto all the parts of the ſoule: Or as if a Candle be brought into a darke roome it lightens all the houſe, but if it be a ſparke of fire, it ſhowes it ſelfe, and glowes and does no more, it doth not enlighten the houſe. Dr. *Preſton*, Saints qualification.

XVIII.

Many things in the nature of Bees when we have moſt ſtudiouſly enquired after them, can we not find out and certainly reſolve and determine of, as concerning their manner of generation, the duration and continuance of the Queene-Bee, with their methods and orders in ſending forth their firſt ſwarme, yet doe we where we are unable to find out certaine grounds

conclude all to be done diſcreetly and orderly, wiſely and wonderfully. And ſhall we not ſuſpect and check our ſhallow conceite and judgement? when it carries us to queſtion and reaſon about Gods providence, about diverſe things below, and not ſcruple our wiſdome, when we cannot ſee the cauſes of things, and Gods courſe in diſpoſing of them, when he deales diverſly, and not as we would thinke in our reaſon, yea and ceaſing from our wiſdome to ſearch into things more then we can comprehend If in finite and ſmall creatures we poore mortalls are often nonpluſt and at a ſtand let us not be too buſie to know the reaſon of his counſells and doings, but aſcribe all to his infinite wiſdome.

XIX.

Dr. *Challoner* on *Act.* 14. 17.

God exhibits evident tokens of his goodneſſe to all men, even then when they are afflicted with diverſe and ſundry calamities, that when others like Drones doe gather honey but from the hive; a true beleever ſhould gather it even from thiſtles; and when weaker veſſells beare ſaile only in a calme, a true veſſell of Chriſt ſhould ſaile beſt to his wiſhed port in a ſtorme.

XX.

Dr. *J. King*, Lectures on *Jo.*

Almoſt of the ſhadow, ſaith *Pliny* (rather then ſubſtance) of a very ſmall living creature, nature hath made an incomparable thing. The Bees never loſe a day from labour, if the ayre will give them leave to worke. And when the weather is louring and troubleſome, they cleanſe their hives, and carry out the filth; They keepe watch and ward at the gates, as they doe in Campes; The Drones they give houſe-roome unto, but (becauſe they labour not) when they have no need of them they drive them from their dwellings. Goe to the Bees, O ſluggard, conſider their wayes, and be wiſe, they are but ſmall among fowles, yet doth their fruit exceed in ſweetneſſe (ſaith the ſonne of *Syrach*) and their labour in greatneſſe. And goe to the Bees you Magiſtrates of the earth, and learne from that little kingdome of theirs, to uſe the vigor and ſharpneſſe of Diſcipline againſt our unſerviceable Drones, who like paralytick members in

in the body of man, looſe and unbound in the joynts of obedience, ſay to the head command us not, for we will not ſtirre at thine appointment.

XXI.

Many courteous natures are as waxe, ſooner able to receive the impreſſion of an admonition, but leſſe able to retaine it. Againe, a more heroicall nature is as wax, not ſo ſoone admitting the print, but ſurely keeping the print being made. Many at the firſt receiving of an admonition moſt hardly, have after moſt profited by it; and others receiving an admonition very gently, have loſt the fruits of it very negligently. Mr. *Greenham*, Grave Counſells.

XXII.

Experience may make us bluſh to ſee how the Bees naturally foreſee ſtormes and tempeſtuous weather, and therefore either flie not abroad at all, or not farre from their hives; that they may preſently on the firſt alteration of the weather repaire home in ſafety: but man alone either unſenſibly doth not foreſee, or unadviſedly will not avoyd the perilous times to come. This folly of the Phariſees our Saviour reproved, ſaying, *When it is evening yee ſay faire weather, for the skie is red; and in the morning yee ſay, to day ſhall be a tempeſt, for the skie is red and louring. O hypocrites, yee can diſcerne the face of the skie, and can yee not diſcerne the face of the times?* Mat. 16. 2,3.

XXIII.

God never ſuffereth evill, but for ſome great and ſecret good, as *Moſes* ſaith, *He cauſed him to ſuck honey out of the rock, and oyle out of the hardeſt ſtone.* Oh the infinite wiſdome and power of God! out of the drie and ragged rock of our ſinnes, he draweth the ſweet ſap of humility from us, and of mercy from himſelfe to the ſweete ſafety and felicity of our ſoules. Sr. *John Hayward Davids* teares.

XXIV.

Riches cannot make men happie by their owne nature, not

only becauſe they are unſatisfactory, deceitfull, and inconſiſtent, but becauſe in the indiſpoſition in our ſelves; they are like the eating of honey to aſſwage the boyling of a chollerick ſtomack, a little pleaſing to the taſt, but much increaſing both the paine and danger of the diſeaſe.

XXV.

Mr. *Roberts* on 130 *Pſalm.*

When a Bee hath once loſt her ſting, ſhe may trouble a while with her buzzing and violent ſtriking, but can doe no further hurt; ſo afflictions and troubles, whoſe ſting is pulled out in the things that Chriſt ſuffered and was conquerour for the Elect. I ſay, the ſting of harme is taken out of the croſſes that God ſendeth for the humbling of his Children or Church. And they are ſent to feare them, not to deſtroy them, as the deſtructions that come on the ungodly with their ſting in them.

XXVI.

Mr. *Harris*, Theorie and pract. of prayer.

Set your mind and thoughts on heavenly things, which are able to ſatisfie you; elſe like the Bee, you will flie from place to place, becauſe earthly things doe not ſatisfie you.

XXVII.

Moſt men will commend the Bee when they feed of her honey, and perhaps with ſome coſt and trouble ſeek her preſervation, but if ſhe once cauſe a little ſmart with her ſting, then they are quickly out of patience, and exclaime as much againſt her, and will be at no further paines and coſt for her ſafety: So many men will be content to ſerve God, as long as they may withall advantage themſelves, but to ſerve him and deny themſelves, is a worke which they have not learned. *Ephraim loveth to tread out the corne*, ſaith the Prophet; you know the mouth of the Oxe was not to be muſled that trod out the Corne, he had his worke and reward together.

Hoſ. 10. 11.

XXVIII.

When honey is expreſſed from the combes, if there be any

corruption or droſſe in it, that will quickly being lighteſt aſcend upmoſt, but the pureſt honey will ſinke (unſeene) to the bottome. So when Satan diſquiets the heart, that which is pureſt and ſhould moſt comfort will ſinke, and be out of ſight, but our ſinnes and corruptions will ever be before our faces.

XXIX.

The induſtrious Bee is diligent to gather honey, and when ſhe hath filled her hive is chafed out of it and her life oft times by fire and ſmoke, that the profit may be ours: ſo that the paines and labour are only hers, but the advantage and profit is ours. And the paines of Chriſts wounds were his, but the benefit ours, the holes in his hands and ſide were his, but the honey which iſſued out was ours: in one word, the price which he paid was his, but the inheritance which he purchaſed was ours, he alone without any demerit of his ſuffered our puniſhment, that we without merit of ours might obtaine his grace. *Auguſt.*

XXX.

Bees diligently apply themſelves to their worke early and late, neglecting no occaſion, they are exceeding intent upon it, much taken with it, and almoſt over-whelmed in their eager and delightfull paines, and that all the time the ſeaſon continueth; for ſtormes and rainy weather may come, and then they will be neceſſitated to lye ſtill, or winter will come, and then there is nothing to be gotten, and if they have not ſufficiently before-hand provided and furniſhed themſelves, they muſt needes ſtarve and dye. And ſhall not men doe good and get good, while they have libertie and opportunity even give themſelves up unto it, and that with all their might. Many a Chriſtian is kept from doing good, by reſtraint, by ſickneſſe, by worldlineſſe, by buſineſſe, by an unwilling and hard heart, howſoever by death, when the winter, when night comes, there is no more working. How dolefull will the priſon, ſickneſſe and death be, when conſcience ſhall pinch us for our libertie, health, and life abuſed? We may therefore juſtly uſe the argument of the Epicure; *Whatſoever thy hand findeth to doe, doe it with* Eccleſ 9.

with all ſpeed, becauſe there is no knowledge, wiſdome, nor invention in the grave whither thou goeſt: but here is that which addeth weight unto it, before we come unto the grave, we may come into this or that ſtrait, that ſhall diſable us almoſt as much as our grave. And therefore while we have any ability or opportunitie in any kind to glorifie God, let us not be negligent, but ſay with the Pſalmiſt; *As long as I have any breath I will praiſe the Lord.* And with that Valiant Captaine that defended his Ship with his left hand, when his right hand was cut off, and with his teeth when his left hand was gone. If we are diſabled one way for doing good, let us try what we can doe another, if by our tongues, our pennes, our hands, our geſtures.

D. Dike, Evang. hiſt.

XXXI.

Some young Queene-Bee in the departure of the laſt Colonie, will ſteale forth with her that is deſigned Leader, becauſe in her preſent ſtate (by ſtaying behind) ſhe is ſure to periſh; In her going forth there is roome for hope, and poſſibilitie of life, if ſhe can attaine the throne. Beleevers that have been formerly reduced unto extremities and impoſſibilities within themſelves, looking upon God as omnipotent, and ſo able to ſave; as merciſull, and in Chriſt reconcileable, and ſo likely to ſave if he be ſought unto: reſolve as the *Lepers* in the famine of *Samaria*, not to continue in the ſtate they are in, nor yet to returne to the Citie, to his wonted haunts and waye, where they ſhall be ſure to periſh, and in the latter is a poſſibilitie not to periſh. Therefore take up a concluſive purpoſe to truſt Chriſt, and if I muſt periſh, yet he ſhall reject me, I will not reject my ſelfe, I will goe unto him.

XXXII.

When Bees rob other hives, a ſpeciall way to divert them, and cauſe them to deſiſt and give over, is by making them worke at home, by running a pen knife through the hive, and ſo (opening their combes) let out their honey, which they will ſeeke preſently to ſtop up againe, and let their neighbours alone. Thus *Hanibal* was wont to ſay, that the only way to fight

fight againſt *Rome* was in *Italie*, and this *Scipio* happily experimented upon the *Carthaginians*.

XXXIII.

If our lippes drop honey by the preaching of Gods Word, and the ſweetneſſe of his Doctrine, it is good and commendable; but if our hands drop Myrrhe by the crucifying of ſinne, and the mortification of our earthly members to the obedience of Chriſt, and the perfect imitation of Chriſtian holineſſe, it is moſt comfortable and heavenly. Dr. *Wall*, Ser. on *Cant.* c. 8. 6.

XXXIV.

As the wittie Bees when they goe about to fill their combes with ſweet honey, ſuck firſt upon the ſweeteſt flowers of the fields and gardens, and then carrie the ſweete juice into their hives; ſo ought beleevers before they enter on their prayers to fixe their cogitations upon the two ſweet flowers of power and love, which they find in the name of the Father, and then carry the pure juice of them, into the inward hives of their ſoules and conſciences, and ſo ſhall they make a moſt precious honey combe of all ſpirituall devotion. *R Meredeth* on *Job.* 6. 23.

XXXV.

Honey and oyle are uſed by the Spirit of God for the two Emblemes of peace and plenty, as we may read in the ſong of *Moſes*, ſaying *He made him ride on the high places of the earth, that he might eate the increaſe of the field, and he made him to ſuck honey out of the Rock, and oyle out of the flinty Rock.* Deut. 32. 13.

XXXVI.

I eate my honey combe with my honey: hereby is underſtood that peace which our Saviour hath made betwixt our Saviour and us. The ſinne of *Adam* and *Eve* in Paradiſe made the breach between God and mankind, the death of Chriſt made the atonement and reconciliation; *When we were enemies we* Mr. *Rollenſon*, Ser. on *Cant.* 5.

were

were reconciled to God by the death of his Sonne. As then *Sampſon* in his Riddle ſaid unto his companions; *Out of the eater came meate, and out of the ſtrong one came ſweetneſſe:* which was meant of a dead Lion, in whoſe belly Bees had hived and made honey: ſo I may ſay of Chriſt, for he was the Lion of the tribe of *Judah*, and from him being crucified for our ſinnes, and ſlaine for our redemption, we receive our honey and our honey-combe, that is to ſay, peace with God the Father. But for the honey-combe, why ſhould Chriſt eate it? Wolves are very hungry that will not leave the bones till the morrow: and ſo is Chriſt, though he be not a Wolfe, yet he is a Lambe, that is both hungry and thirſty, till he have taken away the ſinnes of the world: and therefore he eates his honey-combe with his honey: ſo greedy is he to cancell the hand-writing which was againſt us, ſo deſirous of our peace and reconciliation.

Zeph. 3. 3.

XXXVII.

Beleevers muſt not flie low and cloſe to the ground, like Bees againſt a ſtorme, but raiſe their flight to a high pitch, even as high as the moſt high; as did *Moſes* when he ſaw him who is inviſible; for *mens quavis ave levior cum deus pennas aptarit, prætervolat montes*, ſaith *Chryſoſtome*. The ſoule when God hath once furniſhed her with wings flies higher then any bird over the higheſt mountaines, and ſo (as the ſame father ſaith elſe-where) as God is ſaid to be in heaven, and yet is alſo here on earth, ſo we that are here on earth are yet alſo in heaven.

Chryſoſt.

Idem. hom. 16. in Epiſt. ad Hebr.

XXXVIII.

As honey is not truly honey when it hath loſt its ſweetneſſe, no more is the death of the righteous truly death, having loſt it's bitterneſſe and fearfullneſſe and terrors in the godly.

Dr. *Kilbie*, Ser. on 1 Cor. 15. 55.

XXXIX.

The Spider is never the more commendable, becauſe he weaves his web out of his owne bowells: neither the Bee deſpiled, becauſe ſhe gathereth her honey out of diverſe flowers.

Dr *Cleland on John* 6.

The

The citing of humane Writs for illuſtrating points of Divinitie, is not ſo common as commendable, if it be done without vanitie and oſtentation, making choice of the beſt Authors, for better underſtanding of the Text, and more cleare declaration of the truth.

XL.

The Bee for her honey pleaſeth many, but for the ſting diſpleaſeth not a few; ſo mildneſſe hath bent, where ſeveritie could not breake.

XLI.

As one will know more of the ſweetneſſe of honey by one taſt of it, then by a hundred diſputations and diſcourſes of it, ſo to ſpeake of ſpirituall joyes to ſuch as have not felt them is ridiculous, becauſe they are knowne by apprehenſion not by diſcourſe, and to them who have felt them, it is needleſſe to diſcourſe of them, for this doctrine is better knowne by one experience, then by a hundred rules. Dr *Balcan.* Qual. on *Pſal.* 26. 5.

XLII.

Mors is *Morſus*, death is but a biting, not a conſuming and utter devouring, as he that biteth taketh ſome and leaveth ſome, ſo death getteth a morſell of fleſh, as the Kite taketh garbadge from the dunghill, and the Dogs offall from the ſhambles, but the ſoule it meddleth not with. I [illegible]ot ther[illegible] fore better compare the grave then to the honey-[illegible]be, where is both honey and waxe. The honey of the ſoule is taken out, the wax of the fleſh remaineth behind, till the reſurrection of juſt men. *Sen.* Dr. *King* B. of *London* on *Iſai.* 38. 17.

XLIII.

The waxe that is affixed to Letters patents, howſoever for ſubſtance it be the very ſame, that which is to be found every where, yet being applyed to this uſe, is of more worth to the Dr. *Uſher* on 1 *Cor.* 10. 17.

Patentee, then all the waxe in the Countrey beside: so standeth it with the outward Elements in the matter of the Sacrament; The bread and wine are not changed in substance from being the same with that which is served at ordinary Tables, but in respect of the sacred use whereunto they are consecrated, such a change is made that now they differ as much from common bread and wine as heaven from earth.

XLIV.

Dr. *Hall*, Med. and Vowes, Cent. 3.

As Waspes making musick about a gally-pot shew plainly that they came only for the honey that is in it: So the rich man hath many friends; although in truth riches have them, and not the man. As the Asse that carried the Egyptian goddesse had many bowed knees, yet not to the beast, but to the burden; For separate the riches from the person, and thou shalt see friendship leave the man, and follow that which was ever her object: while he may command and can either give or controll, he hath attendance and profer of love at all hands; but which of those dares acknowledge him when he is going to prison for debt.

XLV.

Mr. *Stock*, Com. on *Mal.* c. 3. v. 5.

Chrysost. ad pop. *Antioch.* 21.

As they who temper bitter cups for children, first rub the mouth with honey, that that heedlesse age when it shall perceive the sweetnesse, shall not feele and feare the bitternesse: so deale witches and wizards, using good words, lawfull meanes and prayers, but as *Chrysost.* for that cause hate and detest them the more, because they vilely abuse the name of God, professing themselves Christians they doe the workes of Heathens; for so the Devills confesse the name of God, and yet were Devills still.

XLVI.

Dr. *Lake*, Expos. of first Epist.

Gods Law, saith *David*, *is sweeter then honey and the hony-combe*; the meaning whereof is, we must not be mercenary in his service, but the pleasure we take in it, must be the cause why we

we intertaine it, therefore it is not without cauſe that God requires the heart, yet he will have it ſeaſoned with love. *Thou ſhalt love the Lord thy God with all thy heart: and love is the fulfilling of the Law.* Deut. 6. 5. 1 Tim. 1. 5.

XLVII.

He that will have a good conſcience, that ſhall give in good evidence for him, and pronounce a comfortable ſentence on him, muſt beleeve well and live well, faith doth purifie the heart, and a good life beareth the fruit that aboundeth to our reckoning, when we judge our owne ſoules. But a man muſt not looke to have this bleſſing of a good conſcience ſuddenly, *Vade ad formicam piger*; ſome read it, *Vade ad apem*, Goe to the Bee, O ſluggard, ſhe gathereth her food in ſummer, whereof ſhe maketh uſe in winter. Gods Bee, that is a man that will have ſuch a good conſcience, riſeth early, haſteth to the Church, heares often, prayes often, meditates often, and ſo doth acquire this abſolving conſcience, *Colligentem in æſtate videre potes, comedentem in hieme videre non potes.* The outward meanes which he uſeth are viſible, but the inward which when time ſerveth he reapeth are inviſible. *Auguſt. in Pſal. 31.* *Auguſt.*

XLVIII.

Bees are not like the [illegible]umble that receive all good and yeild none to others, to their dependants; but are like the fig-tree, the vine, the olive, they that belong to them, that care for them, are all the better, for they are inriched by them. If the Bees have any excellency, the Bee maſter ſhall communicate with them. A good patterne for Kings and Governours, who ſhould herein imitate the Bees; when a man ſeeth an excellent worke, he gueſſeth that the workman was excellent, though he ſeeth him not: ſo the eminency of the Governour may be ſeene when he is not ſeene, it may be ſeene in the eminency of his people.

XLIX.

Bees ſometimes ſting, but ordinarily without any great or

long prejudice. The danger is nothing in comparison of the biting of an Adder, which is even unto death, death speedie, death painfull and wofull. and that as naturally and as inevitably as *Opium* procureth sleepe, or *Ellebore* purgeth, or any poyson killeth. So though every sinne (unrepented) hath wrath and judgement following of it hard at the heeles, yet some sinnes are more pernicious, Woe and alas, sorrow and strife, shame, povertie, and diseases are enough as *Solomon* notes to make drunkennesse odious, but because (as he observed) drunkards are men past shame and grace, senslesse of blowes, and therefore much more of reasons and words, being bewitched and besotted with the love of wine, will easily over-see and over-leape these pettie woes, therefore *Solomon* sets before their eyes, the direfull end and fruit, the black and poyson-full [illegible] of this sinne; *In the end it stingeth like a Serpent, it biteth like an Adder*; if once a custome, ever a necessitie. Wine takes away the heart, and spoyles the braine, overthrowes the faculties and organs of repentance and resolution. And it is just with God, that he that will put out his naturall light, should have his spirituall extinguished, he that will deprive himselfe of reason, should lose also the guide and Pilot of reason, Gods Spirit and grace.

Dr. *S. Ward*, Ser. on *Prov.* 23. 29.

B[illegible]

Bees (howsoever some conceit [illegible] contrary) are much advanced and advantaged by the winter: there is thereby not only a preparing of the earth for a vigorous production of flowers: but a long rest and sleepe doth strongly dispose and fit them both for breeding and also honey-gathering. Whereas we may observe, especially in dry seasons, though the weather be very faire, and there be some flowers, yet are they not very beneficiall. And it is needfull for Christians to find the presence of Christ in the way of humiliation and debasement, causing us to afflict our owne soules, as to feele his presence, joy and comfort. In this life we cannot be without this gracious dispensation. We may therefore comfort our selves, that howsoever Christ leaves us, yet he will alwayes leave somewhat behind him, as he left Myrrhe after him upon the handle of the doore,

Dr. *Sibbs*, Bowells opened.

Cant. 5. 6.

some

ſome Myrrhe is left alwayes behind upon the ſoule, which keepes it in a frame and ſtate of grace and ſweetneſſe. Myrrhe was one of the ingredients in the holy oyle, as it is; and ſo this leaving of Myrrhe behind him, ſignifies the oyle of grace left upon the ſoule; that inabled the Church to doe all thoſe things which are ſpoken of *Cant.* 5. 6.

LI.

Mercy comes naturally from God like honey from the Bee; but juſtice like the ſting, only when ſhe is provoked. Mr. *Swift*, Ruine and repaire of kingdomes.

LII.

Bees in their firſt being (while wormes) are uncapable of any excellency, of any abilitie to profit themſelves or others: yet they muſt for a time abide in it, and then they muſt dye that they may be changed, and ſo become agill, able, uſefull creatures. As they which dye cloath doe not immediately change one contrary into another, but firſt turne a white into an azure, and that into a graine colour: And as thoſe that work in wax, cannot frame any new impreſſion in it, till the old be defaced: So the image of the Prince of this world the Devill muſt firſt be defaced, before the image of Chriſt can be formed in us, we muſt dye, before we can live.

LIII.

The Bee being to flie home to her hive, and fearing leaſt if ſhe ſhould be taken by the way with a rough winde, ſhe might perhaps be blowne about in the ayre, counterpoiſeth her ſelfe with a little ſtone, and ſo flies ſtraite home *. This teacheth us what we ought to doe, we muſt not be wavering and carried about with every blaſt of doctrine, like a reed ſhaden in the wind, but as the Bee is ballanced with a little ſtone, ſo we muſt be built on the chiefe corner ſtone, and grounded upon a rock and eſtabliſhed with grace, that howſoever the raine fall, or the floods ariſe, or the winds blow, or what times ſoever come, yet we may ſtand faſt in the ſtreet which is called *ſtraight*; alwayes

Ambroſ. de Virginitate quoted by Dr. *Playfere* in his pathway to perfection.

* It is true only of the *Candian* Bees, if of any. However the Morall is not amiſſe. Act. 9. 11.

wayes following Chriſt directly towards the marke.

LIV.

Honey is very ſweet and pleaſant to the taſt, but eaten overmuch is bitter in the ſtomack, and the maker of it the Bee hath a ſting in her taile. Such are the delights and pleaſures of the world; therefore ſaith *Martiall* an ancient Biſhop, *Quid ad nos delectatio mundi*, what have we to doe with the delights of the world? you may call it as you will, pleaſure, paſſe-time, mirth, joy, but in Gods Dictionary it hath no ſuch name; but is there called *Adams* goodly Apple, which being eaten deprived them of Paradiſe: *Eſaus* red pottage, which being ſupt up, bereaved him of his birth-right: *Jonathans* ſweet honey which being but taſted, was like to coſt him his life. It may delight thee for a while, but it ſhall torment thee for ever. As any ſolid body, though it have never ſo faire a colour as crimſon, purple, azure, yet alwayes the ſhadow is black; ſo any earthly thing, though it have never ſo faire a ſhew, yet alwayes the ſhadow of it is black, and the delight thou takeſt in it, ſhall prove to be grievous in the end, there is bitterneſſe in this ſweetneſſe, a ſting in this Bee. And therefore *Philo* calls the world, *A ſweet bitter thing*: let us then account worldly delights not *Naomie* but *Mara*, becauſe it is nothing ſo much *Naomie*, ſweet and pleaſant at the firſt, as it is *Mara* and *Amara*, bitter and loathſome at the laſt.

Martial. Epiſt. ad Toloſ. c. 18.

Philo.

LV.

An heavenly mind turnes earth into heaven, like a Bee that ſucks honey out of (ſuppoſed) bitter herbes, and like unto fire that turnes into fire that which is caſt into it. As the good ſtomack doth turne even groſſer meats into good nouriſhment, whereas an ill ſtomack would turne the fineſt meates into bad juice.

D. Dyke, Evang. biſt.

LVI.

Let a ſwarme remaine at the place where it was hived a day or

or two, and then be removed to another ſtanding; yet for two or three dayes after will they either ſullenly keepe in (except the weather be very faire) or if they flie abroad and gather, repaire with their labours to the firſt place, hankering and flying about it moſt part of the day, ſome not at all returning back to the hive, but deſperately dying there, and the reſt for many dayes lingring about their firſt manſion. And are there not many in the world, who having ſtood in the way of ſinners, and ſat in the chaire of the ſcornfull, cannot be moved or perſwaded to alter their choice, but will doe well (to be angry) to be evill. And if feare of hazzard or hell, or love of benefit, allures and with-drawes them from the publique practiſe, yet ſhall they not from the inward liking and approbation, ſo that when he alters his ſtanding, gives over the practiſe of his ſinnes, ſeemes to be divorced from them, becauſe he hath a ſtation, an abiding elſe where, in his open carriage ſomewhat altered, yet he flies about his former ſtanding. his thoughts and imaginations feed all day long upon his luſts, he reliſheth ſpeculative wickednesſes, ſo that when he hath withdrawne himſelfe from his ſinne, and given it over, he may have a months mind after it, he may doe with it ſtill as the husband of *Michol* did, when by a ſtrong power, ſhe was taken from him, it would have hazzarded his life to have refuſed, yet ſaith the Text, *he came weeping after her a farre off* he longed after her ſtill, and loved her ſtill. So a man may part with his ſinne after ſuch a manner, that ſtill he goes weeping after it, he would have it againe, he would faine enjoy it, if it were not for ſome greater danger, or ſome greater trouble that he expoſeth himſelfe unto: as you ſee in *Phalti-l*, it was not for want of love to his wife, that he parted with her, but it was out of a deſire he had to ſave himſelfe, to eſcape the danger of the Kings wrath, impriſonment, and death, that would have followed upon it.

LVII.

Bees are creatures fitted with naturall inſtruments for the getting of honey; they have long tongues to draw it out of the ſockets of the flowers, and they have nimble wings to carrie them from place to place, that ſo what is not in one field may

be

be found in another, and they have quick sights to discerne, but most active is their smell. And they have a little bottle within them to containe the honey, when they have extracted it, and (which is more then all) delightfull willingnesse to employ all these abilities for the compassing of this end, and the thriveing in their labours by all the meanes and opportunities they have.

Dr. Staughton, Righteous mans plea to true happinesse.

But the foole hath a precious price in his hand, but knowes not how to use it, he lets slip many golden opportunities, letting them runne like water besides the Mill, driveing no trade of knowledge with them, making no use of them for that purpose, and so soone loseth all the benefit of these meanes he hath: it is admirable to thinke how under the droppings of the Pipe a man should be drie, how that under the continued meanes of grace, a man may continue in deepe ignorance; it is terrible, I say, to thinke, that whereas delicious Manna, heavenly Nectar falls dayly about our tents, as it were, that if a man would vouchsafe to step out of his doore, and carry his Omer in his hand, he might fill it every day. But if men will not vouchsafe the gathering of it, never make use of the meanes of grace that God offereth, but will be as childish and as foolish as those that goe to the Market, they goe there for some businesse, but when they come there (like fooles) they goe see this gay thing, and the other gaudy thing and so forget utterly their errand, and goe home againe without it; they come to Gods house to see and to be seene, to prate with this partie, and gape on another, and so let all fall besides them, without minding what they heare, or to know and remember it; they may have excellent meanes, and yet thrive not, make no advantage of them: but he that will thrive and increase in knowledge, must make precious account of the meanes, laying up something out of every opportunitie that he hath.

LVIII.

Dr. J. Taylor, The doctrine of repentance.

There can be no habit of some sinnes, as in parracide, and in the willfull murther of our selves: all their malignity is spent in one act, and the event is best declared by one of them. The man dyes in his sinne, in that sinne which excludes him from heaven. Every act of these sinnes is like the stinging of Bees.

—*Anti-*

— Animamque in vulnere ponit.

He cannot ſtrike againe, he can ſinne that ſinne over no more, and therefore it is a ſingle act that dammes in that cauſe, unleſſe he repent truly and effectually.

LIX.

Bees ſting ſeldome when they conflict with Inſects, but when they contend with men or beaſts they ſting readily, their rage is as high as their ſuppoſed enemies power, ſo that it is evident (by an inſtinct of nature) they are not ignorant of their owne danger, and yet to ſatisfie their ſpight, out of a bad cuſtome, though naturall, will undoe themſelves. Such is the violence of cuſtome in ſinne, which is the Law of ſinne, that by it, a man is over-ruled againſt his will, he cannot leave ſinne if he would. For as an old diſeaſe hath not only afflicted the part of it's proper reſidence, and by it's abode made continuall diminution of his ſtrength, but made a path alſo and a channell for the humours to runne thither, which by continuall defluxion have digg'd an open paſſage, and prevailed beyond all the naturall powers of reſiſtance. So is an habituall vice, it hath debauched the underſtanding, and made it to beleeve fooliſh things, it hath abuſed the will, and made it like a diſeaſed appetite, in love with filthy things. It is like an evill ſtomack, that makes a man eate unwholſome meate againſt his reaſon. That's a ſad calamitie when a man ſees what is good, and yet cannot follow it, nay that he ſhould deſire it, and yet cannot lay hold upon it, for his faculties are bound in fetters, the habit hath taken away all thoſe ſtrengths of reaſon and religion, by which it was hindered, and all the objections by which it was diſturbed, and all that tenderneſſe, by which it was uneaſie; and now the ſinne is choſen, and beleeved, and lov'd, it is pleaſant and eaſie, uſuall and neceſſary; *Scibam ut eſſe me deceret, facere non quibam miſer.* I knew it well enough, how I ſhould comport my ſelfe, but I was ſo wretched, that I could not doe it. *Plautus in Trinumo.* *Idem in eod.*

LX.

Bees and Waſpes, though they ſting not in the extremitie of

winter, nor when they are benummed with cold, yet are full of poyſon, ſo that it is not want of deſire to doe miſchiefe, nor yet want of malice, but only want of abilities. And there be ſonnes of *Belial*, that will fawne and humble themſelves with a pretence of much affection; *Joab*-like, *Art in health my brother?* yet beleeve him not, for there are ſeven abominations in his heart; he waites but an opportunitie or ability, and his ſword ſhall be in thy fift rib. they were not voyd of malice before, but only wanted power.

LXI.

Bees and Flies are often entangled in the Spiders Cob-web, and miſcarry; but Waſpes being ſtronger creatures eaſily breake through and eſcape: poore men ordinarily being taken in their crimes, endure the ſeverity of the Law, but the wiſe and great ones hide their counſells deepe, or carry their actions cunningly, or if they be found out, yet as *Anacharſis* ſaid, by their greatneſſe they breake through the Lawes, and ſo eſcape.

LXII.

If the Waſpes rob, and the Drones profuſely ſpend too much, to the prejudice of the Common-wealth, the Bees then beſtirre themſelves, and chaſe away ſome and chaſten others. And it is no leſſe the Magiſtrates duty to procure the publique good, *Et videre ne quid reſpublica detrimenti capiat.* To provide that the Common-wealth ſuffer no detriment or harme. If therefore any hinder the publique good, or ſhall worke any diſadvantage or damm:ge unto the State, the wrath of the Magiſtrate ought to turne againſt ſuch a man. And as God when his Lawes are broken, or himſelfe any way diſhonoured, waxeth angry with men: ſo theſe Gods on earth, when men by contemning their authoritie, and denying them due ſubjection, goe about to diſturbe and ſet combuſtion in the State, have juſt cauſe to be angry, and to ſeeke revenge upon them.

Mr. *Downe*, Subjection to the higher Powers.

LXIII.

Dones, though meek creatures, yet (provoked by their fellowes)

lowes) will fight and grapple together. But Drones never voluntarily offend any, nor yet (provoked) turne againe, all their fight is flight, either to goe out of the hive, or to lye many together in a heape in a corner of the hive, that so their numbers (holding together by their feete) may in some sort secure them. And in vaine were resistance where nature hath denied a sting. Wrath and desire of revenge in him that wanteth power, is vaine and foolish, according to that of the Poet:

Quid stulti proprium? non posse et velle nocere. It is the propertie of a foole wanting abilitie, to desire to doe hurt. *Auson.*

LXIV.

The Bees combes are perpendicular from the top of the hive to the bottome, and so they are very long, but yet they have a breadth likewise, the depth of the cells on either side, which yet holds no proportion with the length: The repletion of the cells with various fillings, some with Bee-bread, some with honey, some with brood, some halfe full, others are emptie, notes the variety of comforts and blessings, which in this life men enjoy, but some more and some lesse. There are vicissitudes and changes in the life of a Christian a diversitie of dispositions and dispensations, to which they are subject in this life. Sometimes with the Disciples on Mount *Tabor* ravished with joy, and by and by, when the cloud over shadowes them, they are afraid. When the Lord lets us feele his mercies, we are alive, but if he hides his face, and sets our sinnes in order before us, we are sore troubled: but ordinarily we dwell more in the valley of *Bacha* then of *Beracha*, our mourning exceedes our mirth. The life therefore of a Christian may be compared to a web so mervellously mixed and woven of comforts and troubles by the hand of God, that the long threds thereof reaching from the day of our birth to the day of our death, are all of trouble, but the weft interjected with manifold comforts. Psal. 50. 21. *W. Cowper, B. of Galloway. Heaven opened.*

LXV.

Waxe left to it selfe growes hard, how much more the stony heart of man? God not ruling and working in his heart, it growes hard.

LXVI.

Mr. *Cotton*, Expos on first Epist. of *John* c. 2. v. 17.

Amnon had a strong lust to his sister *Tamar*, but when he had fulfilled it, he hated her more then he loved her. So when we have fulfilled a lust, we are not satisfied with it, but say to it, arise, be gone; As a Bee having suckt something from one flower, goes to another, and then to a third; so we are soone weary of lusts, there is an emptinesse in the creature, it is no way able to satisfie the desires of mans heart, but they are soone weary, and therefore desire variety.

LXVII.

Diverse hives will conspire together to rob their harmlesse and innocent neighbours, but oftentimes when they have plundered and worried others, then doe they vexe one another, and warre among themselves. It is impossible that any true peace should be among the wicked, whilest they want the solder that should glew them together, faith; it is therefore no wonder to see the Egyptians against the Egyptians. *And they shall fight every one against his brother, and against his neighbour, Citie against Citie, and Kingdome against Kingdome. And they shall eate every man the flesh of his owne arme, Manasseh Ephraim, and Ephraim Manasseh*; for agreement in evill is not peace, but conspiracie, wicked mens combining themselves, may be a faction, no unitie, no amitie.

Isai. 19. 2.

Vsi. 9. 22.

LXVIII.

As humility, like the Bee, gathers honey out of ranke weeder, very sinnes moving to repentance: So pride, like the Spider, sucks poyson out of the faireſt flowers, the best graces, and is corrupted with insolence.

LXIX.

Bees are painfull creatures, but they enjoy not all their labours, but readily contribute (out of their plenty) a portion

to

to their keepers. *Sic vos non vobis.* Still supplying their owners neceſſitie out of their fruitfull and uſefull ſtore. And ſhall a man of more ſingular graces and faculties be idle, a burden to the world and himſelfe. If happineſſe conſiſted in doeing nothing God that meant *Adam* ſo happie, would never have ſet him about buſineſſe, but as Paradiſe was his ſtore-houſe, ſo alſo his work-houſe, his pleaſure was his taske, there is no ſtate of man that can priviledge a folded hand, our life is *vita pulveris non pulvinaris*, Hands, meanes, and moneys, men make the protection of idleneſſe, when as *Adam* commanded the whole earth, yet worke expected him. Mr. *Adams*, The barren tree.

LXX.

Robbing Bees of diverſe hives will joyne hands, and league together without jarring or diſcord, though at another time their hoſtility is continuall, their fewd implacable, their difference is irreconcileable. Nay Waſpes alſo, though there be a naturall antipathie betweene them, yet to doe a miſchiefe to a neighbour hive, will comply and unite together with them. There is a combination of the ungodly, even ſo farre as to the very participation of their eſtates; *Caſt in thy lot with us, we will all have one purſe*, they are entangled in mutuall amitie, like beds of Eeles, nothing but thunder can breake their knotts. *Is it much*, ſaith Chriſt, *that you love them that love you?* Robbing Bees and Waſpes doe it, *even Publicans doe the ſame.* Prov. 1. 14.

LXXI.

Bees are often ſuffocated and drowned in their owne honey, that which with induſtrie and labour they had gathered (the combes being melted with the heate of the Sunne or caſually broken) And the ſinnes of many, which they had wearied themſelves to act, often prove their ruine and deſtruction. *Sodome* might have ſtood for all the five Kings that bad her battell, if the unnaturall fire of luſt had not drawne downe upon her unnaturall fire, I meane the fire of hell (as *Salvian* ſpeaketh) from heaven it was not. It was not *Titus* ſiege without, but the Zelots ſedition within the walls that diſpeopled *Jeruſalem*, ſtrowing *Salvian de Guber. dei lib. 1. Joſephus de bel. Judaico.*

Dr. Fearly, *Pandora* her boxe.

strowing her streets with dead carkasses, and dying her common Sewers with blood. It was not the *Assyrian* horse and Chariots, but *Jeroboam:* golden Calves, together with their forceries, witchcrafts, and other sinnes unrepented of which destroyed *Israel. The enemies of a man*, saith our Saviour, *are those of his owne house. Plaucus Plautius* hideing himselfe in the time of the proscription, was found out only by the smell of his sweet oyles, wherewith he used luxuriously to anoynt himselfe.

Mat. 10. 36.

Camerarius Med. hist. cent. 1. c. 20.

LXXII.

Bees (as almost all other Insects) are in their first estate and condition very rude and imperfect creatures, they have none of the senses, except feeling and tasting, they only eate to live, and live to eate, and againe after a time they neither eate nor live, but dye to live. But as soone as they have transmuted their shape, they come forth goodly and beautifull creatures. In the valley of teares it is not perfect day, no not with the best Christian under heaven, but it growes by degrees till it be perfect day with them, which is at the day of their dissolution. Like to the earthen pitchers of *Gideons* men, when they brake their pitchers, the lampes gloriously shone forth and dazled their eyes; thus it is with a Christian, when these earthen pitchers and carkasses are broken, his light will shine forth gloriously, in the meane time we have light, we have lampes, but they are pitchers shining very dimly.

Judg. 7. 16. 20.

LXXIII.

The first death or transmutation of the Bees, is their profit and advantage, their excellency and glory, they dye but yet to live more nobly. And death to the godly is not the death of the man, but the death of sinne in the man: *Mors est sepultura vitiorum.* As the Worme which is bred in the tree (saith *Chrysostome*) doth at last consume it, so death which is brought out by sinne, doth at the length consume and destroy sinne in the children of God.

Ambr. de bono mortis. c. 4.

LXXIV.

LXXIV.

The Mother-Waſpes and Hornets after they have wrought a while and procreated their kind, give over labouring and are maintained by the induſtry and piety of their off-ſpring. But Bees never ſue out a *quietus eſt* when they are old to diſcharge them from their labours, but as they are beſt acquainted by experience, what flowers are moſt advantagious and profitable, ſo are they more willing and able by practiſe to undergoe the honey-gathering labour, thus doth exerciſe increaſe ſtrength and diligence. Hypocrites with *Jehu* may drive on a while furiouſly, with *Joaſh* may hold out a great while, but at laſt they will give in, and be weary: but let a beleever exerciſe himſelfe in grace, and he will grow up in the Lord, and increaſe in ſpirituall ſtrength. A tree the more holdfaſt it hath with his roote in the earth, the more fruit it brings forth. They that walke dayly in a Chriſtian courſe increaſe ſtrength, they walke from ſtrength to ſtrength, till they meete their God in *Sion*.

LXXV.

The honey in *Sampſons* Lion is very fitly likened to the profit of afflictions; The aſſaults of affliction may be terrible like *Sampſons* Lion, but they yeild much ſweetneſſe to thoſe that dare encounter and overcome them, who know how to overlive the witherings of their gowrds without diſcontent or peeviſhneſſe, while they may yet converſe with God.

LXXVI.

Nothing is created for it ſelfe, but ſo placed by the moſt wiſe providence, that it may conferre ſomewhat to the publique good, the pooreſt creature yeilds ſome good wherein it doth imitate the goodneſſe of the maker, every thing is enabled with ſome gift for the univerſall benefit. Kine give us their milke, Sheepe their wooll, Bees their honey and waxe, every one paies a tribute to man their uſufructuary Lord.

LXXVII.

LXXVII.

Mr. *Stock*, Com on *Mal.* c. 3. v. 11.

Gods power was no lesse in creating a little Bee then a great Lion; as the Clock-makers skill is seene in a little Watch, as in a great Clock; so Gods goodnesse is in the smallest and most ordinary matters, as in the greatest and most extraordinary.

LXXVIII.

Bees smelling a field of Cole-seede, though a mile remote from their hives, will directly fly thither, tempted with no other blossomes by the way, though much nearer; see them perhaps they may as they flie, but will not be diverted or withdrawne by them. And so many things are to be observed in our course in this world with our eye, which are not to be intertained into our delights and affections.

LXXIX.

Bees, while they are numerous and full, endure without regret or discontent the royall issue, but when by the emission of two or three Colonies, they find their numbers greatly empaired, their strength much weakened, then without delay they doe either destroy or chase them out of their hives. Beleevers while they are in a naturall estate, easily admitted the fellowship of any lust, are not much troubled nor vexed with Satans wiles. But as soone as their enlightened eyes beginne to see and discerne their miserie and danger from them, they labour to kill and mortifie, to subdue and crucifie every sinfull passion, and all the hellish brood of lust.

LXXX.

Basil. *Ser. de Clem.*

These are Natures unwritten Lawes, that every man the greater he is in place and power, the more slack he ought be to punish. And *Seneca*, the greater powers ought not to be hurtfull, if they be disposed according to Natures Law. The Bees have a Queene differing from the vulgar in greatnesse and brightnesse,

neſſe, but herein eſpecially is ſhe different from them, for they are according to their bodies the moſt quarrelſome and angrie creatures that are, ſtinging thoſe that offend them. But the Queene hath no ſting (uſeth it not) for nature would not have her feirce or revengefull; Which ought to be a preſident to all Kings and Commanders in the world. Let them be aſhamed not to take example from ſuch ſmall animals, for mens mindes ought to be more moderate and compoſed becauſe of the great hurt, that they otherwiſe occaſion to them that they are diſpleaſed with. Oh that men, ſaith one, did loſe their power with their anger, and could hurt (as the Bees ſting) but once. *M. Antonius*, Sirnamed *the Philoſopher*, ſaid, that there was nothing that did more become a Commander then clemency: and therefore as *Claudian* reports, *Theodoſius* gave his ſonne *Honorius* this counſell; Though we be overcome in every thing, yet in mildneſſe and clemency to yeeld to none. *Pyrrhus* king of *Epirus* for this is commended that being derided and reproached by certaine young men in their cups, he let them goe unpuniſhed, when one pleaded it was in their wine.

Tiberius as *C. Tacitus* witneſſeth in the beginning of his Empire expreſſed the like patience, for he diſſembled bitter and ſcurrilous writings, and would not have the Authors queſtioned, ſaying, in a free Citie their tongues ought to be free. A certaine Poet called *Magus*, girded at *Philemon* in his publique playes, afterwards being in *Philemons* power, he commanded his ſervant openly to cut off his head, but in private that he ſhould touch his neck with a naked ſword, and ſo unhurt to diſmiſſe him, firſt giving him nuts, cockalls, and balls and other childiſh toyes: wherein the Prince openly ſhewed that he had a ſting but would not uſe it. And to ſpeake evill of a Ruler is rather childiſh then manly. The ſame kingly vertue as in many other heroicall actions, ſo in their letters, *Theodoſius Arcadius*, *Honorius*, the Emperours notably approved. This was the ſumme of their Letters to *Rufinus*, if any reproached or diſgraced them out of levitie he ſhould neglect it; if out of anger and madneſſe, he ſhould compaſſionate and pitie it; if out of wrong and injurie remit and pardon it.

A. Alciat Emblemat. 48.

LXXXI.

Prov. 6. 6. *Solomon* the wiſeſt among the ſonnes of men ſaith, *Goe to the Piſmire*, &c. ſo thou ſhalt learne providence, in a faire day to provide a cloake for the tempeſt; in peace to foreſee warre, and in youth to lay up ſomewhat for old age. And maiſt thou learne ſo much from the Piſmire? And when thou walkeſt into thy Garden, and beholdeſt the induſtrious Bee, which with unwearied diligence fetcheth her food from a farre, and that (not as the Piſmire) for her alone behoofe & ſupply, but for the neceſſities and ſuperfluities alſo of the ſonnes of men; Nay doſt thou behold their admirable government, chaſt procreation, motherly affections to their iſſue, ſtout defence of their hives and houſes, with many other occurring paſſages from their birth to their death, which are in this Treatiſe more largely dilated, and canſt thou learne nothing? ſurely if thou (whoſoever thou art) ſeriouſly meditates on the particulars herein exhibited, thou canſt not but acknowledge that God is *Maximus in minimis*, &c.

LXXXII.

Dr. *Hall*, Med. and Vowes, *Cent.* 3. As a true friend is the ſweeteſt contentment in the world, ſo in his qualities he well reſembleth honey, the ſweeteſt of all liquors. Nothing is more ſweet to the taſt, nothing more ſharpe and cleanſing, when it meetes with an exulcerate ſore. For my ſelfe I know I muſt have faults, and therefore I care not for that friend that I ſhall never ſmart by. For my friends, I know they cannot be faultleſſe; and therefore as they ſhall find me ſweet in their praiſes and encouragements, ſo ſharpe alſo in their cenſure. Either let them abide me no friend to their faults, or no friend to themſelves.

LXXXIII.

Idem in eodem Cent. An evill man is clay to God, Wax to the Devill; God may ſtampe him into powder, or temper him anew; but none of his meanes can melt him. Contrariwiſe, a good man is Gods wax, and

and Satans clay: he relents at every looke of God, but is not ſtirred at any temptation I had rather bow then breake to God: but for Satan, or the world, I had rather be broken in pieces by their violence, then ſuffer my ſelfe to be bowed unto their obedience.

LXXXIV.

Bees obſerve a martiall poſture in all their carriages; ſome keepe guard at the gates, others like ſcouts watch at a remoter diſtance: Some within the hive, as Souldiers in Garriſon obſerve who goes in and out. So though that many follow their labours at home and abroad, yet others are warlikely employed leaſt they ſhould ſuffer from an unknowne or unſuſpected adverſary, for want of foreſight and preparation. Thus *Iphicrates* an Athenian Generall encamped in time of peace, and among his friends: yet ſtill entrenched his Armie, ordered his outworkes, ſet his watch, kept his *corps du guard*, laid out his centinels, and in a word, obſerved all Martiall Diſcipline, as if he had been in the heate and height of warre: and being asked by one of his familiars, what he feared, he anſwered to be ſurprized, and leaſt it ſhould fall out that he ſhonld be conſtrained to ſay, I thought not on it. Oh that Beleevers were thus wiſe to thinke of their latter end, and alwayes to mind when the appointed time of their change ſhall come, then would they be alwayes prepared to intertaine death, either ſecretly or openly. Jeſus Chriſt our grand Captaine, who valiantly triumphed over it, often inculcates this watchfullneſſe upon his Diſciples and Apoſtles, and in them on all beleevers; *Be yee alſo ready, for in ſuch an houre as you thinke not, the ſonne of man commeth.* And againe, *Watch therefore, for you know neither the day nor the houre, wherein the ſonne of man commeth.* And elſewhere, *What I ſay unto you, I ſay unto all, watch.* The *Sybarites* which were not enlightened with ſuch a Sunne, yet alwayes obſerved this cuſtome in their banquets, to have a deaths head delivered from hand to hand by all the gueſts at the Table, to the end to admoniſh them not to be tranſported with intemperance, and to cauſe them to remember, that as they were nouriſhed of the

Mat. 24. 49.

Mat. 25. 13.

P. Cotton, Ser. de la Mort.

flesh of dead creatures, that they lived in dying, and dyed in living. And the *Egyptians* for the same reason carried in their processions a vessell of gold full of earth, which was as if a Herald should proclaime to all the assemblie in the words of the Prophet, *O earth, earth, earth, heare the word of the Lord.*

LXXXV.

J. Tarnovius in Psal. Passion.

The enemies of the Church are compared to Bees, feare not their multitude nor their rage; they are Bees not Lions, they buzze, they make a noise, they have stings but they cannot doe what they would, their power is lesse then their spight and malice, and they hurt not but with their owne certaine death and destruction. Beleeve then God in the midst of their machinations, and applaud thy selfe in their tumultuous projects, that all shall be frustrate and abortive. *Pulveris exigui jactu. compressa quiescunt.* When God pleaseth he can but blow on selfe-conceited *Nymrods*, mighty hunters, oppressing and tyrannicall enemies, and easily overthrow them, and crush them to the earth, and breake in pieces all their counsells. If *Pharaoh* vex Gods people, asking, *Who is the Lord?* Flies, Lice, and Caterpillers shall be his challengers and Conquerours, and aske, *Who is Pharaoh?*

Frid. Spanhem. dubia Evangelica.

LXXXVI.

Honey was an usuall food for little children among the *Jewes*, wherefore *Isaiah* saith of Christ, *Butter and honey shall he eate.* By *honey* some say was designed the Divinitie of his birth, and by *butter* his humanity, but foolishly and besides the mind of the Prophet, whose words are cleare, and the sense open. As if he had said, *Immanuel* shall not only be a true God, but also a true man, that is, he shall feed of such meates as your children use to eate of, so that his education shall be common and ordinary, for fat and sweet meates are usually provided for infants, and especially honey among the Easterne people. So that by these words synecdochically at least is noted that his conception shall be miraculous, but not his education. The Pro-

Isai. 7. 51.

Salmeron. tract. 31.

phet

phet subjoynes that there should be found in him progresse or proficiency like unto other infants, namely, imbecillitie of knowledge to be limited and terminated till he was growne to ripenesse of yeares, for then he should be endowed with an excellent judgement not only to distinguish good and evill, but to choose the good and refuse the evill. The complement of all which is found, *Luk.* 2. 52. *Phil.* 2. 7. To be equall with God on one side, and on the other that he humbled himselfe. All which the Prophet would here have noted, although in somewhat obscure words, with respect to the times and propheticall stile. Whence it is also evident that they doe altogether wrest the words of the Prophet that insert to that, and take it finally, as if the child should therefore eate honey and butter, that he might know to refuse the evill and choose the good. In a word, Christ is said to eate the butter and honey, that is to be frugally educated with such meates as were naturally afforded, for there was nothing more common among the *Jewes* then Butter, for most of them kept cattell. And as plentifull was honey, which their woods and forrests did sufficiently furnish them withall.

LXXXVII.

Figuratively the sudden and unavoydable destruction of the wicked is often in Scripture expressed by the melting of waxe. In some places it is spoken of the mountaines, to set forth Gods Power and Majestie. First, Learne hence that God doth arme himselfe as it were in the defence of his people, but not as men are wont to doe, because he is furnished with so great power, that with a nod he can confound his adversaries. Although therefore sometimes he seemes to dissemble, or not to take notice of their danger, yet will he in due time appeare in their behalfe, nor needes he much preparation for their overthrow, for the mountaines melt like waxe before him, much more shall crawling wormes. Secondly, let us be humbled before the powerfull hand of God, and acknowledge our frailtie, for we are in evaporating smoke, a vanishing shadow, a melting waxe. And if we have any stability, let us acknowledge that we have it from God, who alone confirmes, defends and preserves us, who

Rivet. Com. in Psal. 68.

who otherwiſe would quickly come to nothing, who were at firſt made of nothing, and have our preſent ſupport and ſubſiſtence in our God alone.

LXXXVIII.

The Queene-Bee never uſeth her ſting; and is therein a monitor to Great men and Princes, to labour for a meek and mercifull behaviour. Let Princes uſe their power for, not againſt their ſubjects.

Non hos quæſitum munus in uſus.

Virgil Ænead. 4.

Let them not hold too ſtrict a hand over the oppreſſed people, let it not be ſaid of their ſubjects, as it was ſaid of the *Romane* ſouldiers under *Severus*, that they were more afraid of their Captaine then of their enemies: if they diſhearten them who ſhall comfort them, or ſtand for them? Yet many Princes uſe their people (though ſuch as the world cannot paralell) as the Hawke in *Heſiod.* dealt with the melodious Nightingale, they plume them, and then devoure them. *Seneca* in his bookes of *Clemency* which Q. *Elizabeth* ſo highly eſteemed that ſhe gave them the next place to the holy Scriptures, ſaith, Let thy ſword not only be put in thy ſheath, but alſo tyed faſt in it; be ſparing of the meaneſt and baſeſt blood. It is for men of lower condition to fall into quarrells and ſtrifes; equalls may exchange blowes one with another without much danger. It ſtandeth not with the Majeſtie of a Prince to engage himſelfe in any quarrell or fight, becauſe he hath no equall to contend with him: ſo farre ought it to be from a Prince to brawle or wrangle, that the ſtraining of his voyce is unbefitting him upon any occaſion whatſoever.

Heſiod. op. et dies l. 1.
Sen. l. 1. de Clemen.
Camden. hiſt. reg. Elizab.

LXXXIX.

Bees are induſtrious in their ſeaſon, for they well know that the neglect of it is their irrecoverable overthrow and deſtruction. And this life is the ſummer and harveſt, wherein we muſt labour and watch againſt temptations. The death-bed or dying houre

houre is a ſharp combate, unleſſe we have gathered into the hives of our ſoules the graces of faith and love, *&c.* Whereby we may live after death, and expect a certaine recompence: He which doth not this ſhall experimentally find in his winter, the darkneſſe of his minde, the Clouds of feare, the wind and froſt of judgement. The Bees draw out of the cels the old and ſtinking Bee-bread, ſo muſt we in our lives mortifie unprofitable and ſinfull luſts, whence great ſinnes may ariſe and be fomented. The Bee being weake with long ſhutting up in the winter, on the firſt opportunity of a Sunne-ſhinie day, renewes her ſtrength by comming forth and flying abroad in the heate thereof. And we muſt learne to raiſe up our dull and drowſie ſpirits by the word of the Sunne of righteouſneſſe. Let us therefore diligently beſtirre our ſelves in the ſummer and faire weather of the meanes, whilſt Chriſt the ſonne of grace ſhineth, while God and his Miniſters call upon us, otherwiſe another day many with *Eſau* ſhall ſeeke repentance with teares, and ſhall not find it.

XC.

The Commander hath a ſting, but uſeth it not for revenge: ſhe rules not by written but by natures Lawes, teaching that they muſt be ſlow to puniſh who are exalted to the higheſt Powers: and whatſoever Bee followes not the Queenes example, preſently repents of her temeritie, for ſhe no ſooner ſtings but payes the price of it with her life. Let Chriſtians heare and learne, who have a command *not to render evill for evill, but to overcome evill with goodneſſe.* *Baſil. hexamer. hom. 8.*

XCI.

To find honey is to taſt the ſweetneſſe of a holy underſtanding, which then is ſufficiently eaten, when our underſtanding is kept under government or moderation, according to the meaſure of our ſenſe; for he is ſatiated with honey and vomits it, who deſires to dive into things he cannot conceive, and ſo looſeth that whereby he might be nouriſhed, and therefore weake under- *Greg. expoſ. Moral in Job c. 22.*

understandings ought not to search into mysteryes above their capacitie and comprehension.

XCII.

Greg. Nazian. Gygnene. Carmin. liber. t. 3°.

We may read the writings of Poets and Philosophers, but yet wisely, to cull out of them, whatsoever is profitable, as also with a discerning judgement to avoyde whatsoever is hurtfull; and so to imitate the wittie Bees, who whatsoever flower they gather of, following nature as their guide, with a singular wisdome suck out only that which is profitable.

XCIII.

Hieron. Com. in Pro. c. 24. 13.

The doctrine of wisdome by *Solomon* is compared to honey and the honey-comb, because that as honey sweetens meates, so the word all other learning, but yet there is this difference in the signification of both, for honey because it is already prepared to eate, signifies the more superficies of the Letter, but the honey-combe where the honey is not expressed from the waxe, doth figuratively point forth the allegoricall signification, that the Veile of the Letter being withdrawne, the sweetnesse of the spirituall sense, but with some delay and labour may be perceived.

XCIV.

Idem Com. in Proverb. c. 25. v. 26. 27.

Honey too liberally eaten killes; so the searching after the knowledge of the Divinitie is sweet, but he which desires to search further then the nature of man is capable; his glory will oppresse and crush him; for as honey taken immoderately bursts the eater, so this enquirie the understanding that cannot comprehend it.

XCV.

Idem Com. in Proverb. c. 25. 16.

Hast thou found honey? Eate so much as is sufficient for thee, least thou be filled therewith and vomit it? hast thou found the sweetnesse of the understanding of heavenly things, which is afforded

afforded and made knowne to the paines and labours of the ſpirituall fathers? As prudent Bees take heed thou deſireſt not to know more then thou oughteſt to know (be wiſe unto ſobrietie) leaſt whileſt thou ſeekeſt to underſtand the higheſt wiſdome, beyond thy abilities, thou loſeſt the knowledge of that which thou didſt throughly underſtand.

XCVI.

Epiphanius likens that man that finds out in others workes any thing profitable, to the prudent Bee, which flies to and fro and lights on every flower, but gathers only that which is profitable for her ſelfe. Whereas imprudent perſons receive that which is hurtfull ſooner then the good: Like the Scarabee that delights and lives in dung and ſtinke, and makes it her content and food, whereas to the Bee it is loathſome and offenſive. *Epiphan. contr. Hæreſ. l. 1. c. 3.*

XCVII.

Cyprian reaſoning againſt the Polytheiſme of the Heathen, ſaith, there is but one Lord God, for ſuch Majeſtie will not endure a corrivall. And this oneneſſe of the Deitie he clearеs from the earth. Was there ever a partnerſhip in ruleing begunne in faith and ended without blood? The *Thebane* fraternitie was quickly broken, as a token of the deadly hatred between them. One kingdome could not hold *Romulus* and *Remus*, whom one womb contained and nouriſhed together. *Pompey* and *Caſar*, though neare allied, yet in their jealouſie and emulation of Command brake aſunder all relations. Nay the Common-wealth of Bees is ſo jealous of the Principalitie, that it ſuffers not the royall Infants to ſurvive, but with an *Ottoman* cruelty murthers all. *Cyprian. traſt. quart. de idolorum vanitate.*

XCVIII.

The wiſe Bee gathers ſweet and wholſome nouriſhment from thoſe places and flowers which a vulgar judgement deemes worthleſſe and good for nothing; and a wiſe Chriſtian

Hilar. in Psal. 134.

from those passages of the Scriptures where the words seemes carnall discernes spirituall excellencies. For as an unskilfull man comming into a field abounding with wholsome herbes, passeth by all as of no more use then grasse, but a skilfull Botanist doth otherwise. So doth a spirituall reader find spirituall advantage from every sentence; to the pure all things are profitable and pure, and if any place seemes uncomely, it is only to those that are such in themselves.

XCIX.

Mice are very hurtfull enemies to Bees, but not at all times alike. In Summer when the hives are full, and the Bees lusty and keepe a constant guard and watch, they seldome meddle with them; but in the winter when they are (benummed with cold) shut into the hives, and almost bereaved of their lives, then doe they without feare or hazzard rob and plunder them. And Satan our constant adversary takes advantage of professors: when they keepe a continuall watch and course in prayer, they doe not so oft miscarrie, but in the night of their ignorance, in the sleepe of their peace and securitie, when they can least espie him, doth he take advantage and by his wily, unseene stratagems overthrow many.

C.

Dr *Hall*, Occasionall Med.

The seeds of discord were scattered in every furrow of the creation, and came up in a numberlesse variety of antipathies. Bees are a continuall prey to the Titmouse, often a morsell to the Spider: their habitations are digged through and plundered by Mice and many other enemies have they, whereby they daily suffer: yet no contest and hostility is so destructive and dangerous as that which is exercised with Bees, creatures of their owne kinde. What is this but an image of that wofull hostility which is exercised between us reasonable creatures, who are conjoyned in one common humanitie, if not religion. We fight with and destroy each other more then those creatures that want reason to temper their passions. No beast is so cruell to man

man as himselfe, where one man is slaine by a beast, ten thousands are slaine by man. What is that warre which we studie and practise, but the art of killing? What ever Turkes and Pagans may doe, O Lord, how long shall this brutish furie arme Christians against each other? Whilest even Devils are not at enmitie with themselves, but accord in wickednesse, why doe we men so mortally oppose each other? Oh thou that art the God of peace, compose the unquiet hearts of men to an happie and universall concord, and at last refresh our soules with the multitude of peace.

FINIS.